

# MARINE REVIEW

Entered at Cleveland Post Office as Second-class Mail Matter.

VOL. XXV.

Published every Thursday at  
418-19 Perry-Payne Bldg., by  
the Marine Review Pub. Co.

CLEVELAND, O., JAN. 16, 1902.

Subscription \$3.00 a year.  
Foreign \$4.50 a year.  
Single Copy 10 cents.

No. 3

## ANNUAL MEETING OF LAKE CARRIERS.

The annual meeting of the Lake Carriers' Association, just closed at Detroit, was a quiet meeting but a great deal of business was disposed of. Considerable work was mapped out for the year and a definite campaign for big improvements outlined. The matter of big improvements planned for connecting rivers of the lake system was the feature of the meeting. These improvements embrace the clearing and deepening of the west Neebish channel of the Sault river, so as to provide two channels through that waterway, the construction of an additional channel at the St. Clair Flats canal, the enlargement of the Weitzell lock at the Sault and widening of the Lime-Kiln crossing. All these undertakings are necessary to safeguard the movement of freight which has grown to vast dimensions. In twenty years the cargo tonnage at the Sault has grown from 1,000,000 tons to 30,000,000 tons. A special committee was appointed to take charge of this program and to seek to have congress act upon it. Much of the preliminary work has, of course, been done. Broadly speaking, the members of the house committee on rivers and harbors are familiar with it. It is hoped that by the next annual meeting much of this work will be authorized if not under way.



WILLIAM LIVINGSTONE.

The unusual honor was bestowed upon Mr. William Livingstone of Detroit of electing him president for the second time. Mr. Harvey L. Brown of Buffalo was elected secretary in place of Mr. Charles H. Keep, who would not again take the office. Vessels of 1,800 tons and less are to pay for the coming year only 2 cents a ton dues. All this is related in detail later on.

It was not until Wednesday morning that a sufficient number of the members of the Lake Carriers' Association had arrived to reach any respectable dimensions whatever. On Tuesday evening the corridors of the hotels, usually crowded at that hour with members, were practically deserted. Wednesday morning, however, contingent after contingent arrived so that when Mr. A. R. Rumsey mounted the broad staircase of the Cadillac hotel and announced that the hour of meeting had come he addressed a considerable body of carriers. Rumsey pounded the marble banister with an improvised gavel and howled himself hoarse for a period of several minutes without attracting the least attention whatever. The carriers, divided into groups of three and fours, continued their conversation in the lobby without apparent knowledge that the energetic figure on the staircase was becoming purple through his exertions.

"Say," he finally shouted, "I'm only a hired man. I'm employed to do this. Somebody lead the way to the assembly room. Can't anybody hear?"

Mr. J. H. Sheadle led the way to Rumsey's intense delight, patting him on the back as he passed, and the others quickly followed. In some such manner as this has the Lake Carriers' Association been assembled every year for the past twelve years.

In the absence of President Wolvin, Vice-President J. G. Keith of Chicago presided at the opening session. Capt. Wolvin sent the following telegram from Washington: "I deeply regret that I am unable to attend the present meeting of the lake carriers. Please express my wish for the success of the association and the promise that I will do all in my power to further its best interests."

The annual report of the board of managers, printed in full in another column, was then read by Secretary Keep. The report shows that there was enrolled in the association last year 874,203 tons, an increase of 32,000 tons over the past year. Of the total of 874,203 tons, 682,230 tons were made up of vessels of less than 1,400 tons, paying the lower rate of dues. Every year the percentage of large vessels increases in accordance with the conditions which are revolutionizing the character of freight-carrying vessels on the lakes. The fleets of the United States Steel Corporation and J. C. Gilchrist of Cleveland now make up 44 per cent. of the entire tonnage of the association. The report of the treasurer, George P. McKay, included in the report of the board of managers, shows all bills paid and a balance of about \$1,000 on hand. Regular dues during the year were augmented by a profit of nearly \$13,000 in the operation of the grain-shoveling plan at Buffalo and also by assistance from the government in the maintenance of certain private lights. Shipping offices of the association shipped 16,766 men in 1901 compared with 14,987 in 1900 and 16,681 in 1899.

The annual statement of T. W. Kennedy for handling grain at the port of Buffalo shows that 132,299,492 bushels were handled, which is, in round numbers, 25,000,000 bushels less than last year. There is a surplus of \$2,800 in the treasury.

### ELECTION OF OFFICERS.

When the election of officers was reached Mr. H. Coulby of Cleveland nominated Mr. William Livingstone of Detroit for the presidency. The nomination was seconded by Mr. C. W. Elphicke of Chicago and the election of Mr. Livingstone was made unanimous. Messrs. Coulby and Elphicke were appointed a committee to escort Mr. Livingstone to the

chair. The newly elected president thanked the members deeply for the honor which has been bestowed upon him for the second time. He added that he realized as he advanced in age that one should not accept honors without responsibilities and he was perfectly willing to bear the responsibility.

When nominations for secretary were called Mr. John Shaw of Detroit said that as Mr. Keep would not again accept the office, he begged the privilege of nominating Mr. Harvey L. Brown of Buffalo. He paid a tribute to Mr. Brown as a competitor and spoke in the highest regard of his character and ability. Mr. M. M. Drake seconded the nomination and hoped that it might be made unanimous—and accordingly it was. Mr. Drake and Mr. W. C. Farrington escorted Mr. Brown to his new post. He said that ordinarily secretaries recorded the deeds of other men, but that Mr. Keep had written his own deeds pretty thoroughly upon the affairs of the Lake Carriers' Association. He had truly been one of the powers of the association and it was Mr. Brown's hope that when he, too, came to relinquish the office he would leave behind him as honorable a record as Mr. Keep had left. Before any further business was transacted Mr. Harvey D. Goulder begged to say a few words.

"It is with very deep personal regret that my official relation with Mr. Keep is severed," said Mr. Goulder. "I sincerely trust that the close personal friendship which has grown up in the course of close official intercourse will continue as long as we both live. The officers and members of the association have found in Mr. Keep an ideal secretary. Ideal in his broad view of the purposes and opportunities of the association and in his earnest, intelligent and extremely competent efforts for carrying them out on practical lines and in putting to good use the forces of the organization. His reports have always brought great credit to the association because they have commanded attention everywhere. His personality and ability have added to its ever-growing strength and increased the remarkably high respect and esteem in which our organization is held everywhere it is known—and that includes at least the United States and the Canadas and especially congress and the various departments at Washington. As we have learned to respect and rely on Mr. Keep as one of our officers, so we have learned to most highly esteem him for those manly qualities which delight us in a friend, and as inscribed on the token itself in your behalf and as representing the feeling of every one in the association, I present Mr. Keep with this repeater watch and chain 'in token of appreciation and esteem.'"

The watch is a splendid specimen of the jeweler's art. It was given, not by the Lake Carriers' Association, but by the individual members thereof, and is the finest that Tiffany had in his store. It has a cathedral gong and strikes the hours, halves and quarters. It also is a stop watch, a repeating watch and has various ingenious mechanisms. It is a Jurgenson and cost \$842. Attached to it was a beautiful chain and a little compass as a charm.

It is customary upon such occasions as these for the recipient to shed a few tears. But Mr. Keep is not of the tear-shedding variety. As he truthfully said, he was taken by surprise, but he was by no means taken off his feet. This incisive and clear-cut young man said without a trace of emotion:

"I thank Mr. Goulder for his remarks, which are doubtless a little over zealous. During the past twelve years the Lake Carriers' Association has made considerable progress. It has been said that there is no cure for pessimism like reading history. As one looks back over the years he can see what progress has been made. The policy of the association has been to avoid entanglements. It has not catered to local or individual measures. It has never asked for anything without good reason. It has never taken any position which it could not fortify with unanswerable arguments. This policy has borne fruit in Washington where, so many unworthy projects being advanced, the members of the house and senate have grown naturally suspicious of everything. I thank you, gentlemen, for this gift."

Nominations for treasurer were then called for, but there was no response. Fully two minutes went by, during which the silence was unbroken. Meanwhile Capt. George P. McKay shifted his position in his seat.



HARVEY L. BROWN, New Secretary.



CHARLES H. KEEP.



"I called for nominations for treasurer," repeated President Livingstone.

"Is it necessary to re-elect him," asked Mr. C. E. Kremer of Chicago. The name of Capt. George P. McKay was then placed in nomination and he was unanimously re-elected as treasurer.

When nominations for counsel were called for certain members wanted to know the name of the person who now holds the office.

"I move we re-elect him whoever he may be," said Mr. Kremer.

And that's how Mr. Harvey D. Goulder of Cleveland was re-elected as counsel. The nominating committee, having to do with vice-presidents, standing committees, etc., was then announced by the chair as follows: H. Coulby of Cleveland, T. T. Morford of Buffalo, C. W. Elphicke of Chicago, David Vance of Milwaukee, D. T. Helm of Duluth, Howard Shaw of Bay City and J. W. Westcott of Detroit.

Mr. Livingstone had received word that Mr. A. W. Colton of Toledo was unable to be present through illness and the following telegram was sent to him by Mr. Livingstone: "Your telegram read to meeting. Am unanimously instructed to wire you the sympathy and hearty good will of every one here and their regret that you are unable to attend and the wish of every one your speedy complete recovery."

President Livingstone proved himself an excellent parliamentarian by suggesting that committees be appointed to consider the following subdivision of work and to facilitate their settlement: West Neebish improvement; enlargement Weitzell lock and canal; lower Detroit river regulations; Sault power canal; Southeast-shoal lightship; dues; some form of permanent organization, and the shoveling question. Mr. E. T. Evans moved that the chair appoint committees of three each to consider these questions and the motion was carried.

"I would be thankful to any of you," said Mr. Livingstone, "for suggestions for membership on these committees."

Mr. Denis Sullivan thought that there was already a committee on the grain shoveling question and suggested that that question be referred to it.

"The present grain shoveling committee is too cumbersome," retorted Mr. Evans. "We want a smaller and more active committee."

Mr. Evans then moved that the present grain shoveling committee be thanked for its services and discharged. This was done and an adjournment was then taken for luncheon.

#### VICE PRESIDENTS, STANDING COMMITTEES, ETC.

As soon as the meeting convened in the afternoon the president announced the following list of appointments:

Vice-presidents—J. C. Gilchrist of Cleveland; T. T. Morford, Buffalo; W. C. McMillan, Detroit; C. A. Eddy, Bay City; D. Sullivan, Chicago; W. H. Myers, Milwaukee; A. B. Wolvin, Duluth; W. S. Brainard, Toledo; F. J. Firth, Philadelphia; W. J. Cummings, Oswego, N. Y.; M. A. Bradley, Cleveland; W. A. Rogers, Buffalo.

Board of managers—T. T. Morford, E. T. Evans, G. L. Douglas, J. J. H. Brown, John Kelderhouse, W. H. Gratwick, Jr., M. M. Drake, Edward Smith, W. C. Farrington, C. H. Donaldson, G. W. Maytham, L. H. Van Allen, Buffalo; M. A. Bradley, James Corrigan, D. R. Hanna, H. G. Dalton, George P. McKay, Harvey H. Brown, John Corrigan, William Gerlach, Henry A. Hawgood, W. C. Richardson, J. C. Gilchrist, W. D. Rees, John Mitchell, R. R. Rhodes, J. E. Upson, Charles L. Hutchinson, W. H. Becker, W. A. Hawgood, W. H. Mack, H. Coulby, J. H. Sheadle, W. G. Mather, E. S. Mills, T. F. Newman, W. W. Brown, Cleveland; James W. Millen, William Livingstone, Jr., A. A. Parker, L. C. Waldo, Alex. McVittie, J. W. Westcott, Thomas Adams, Detroit; Edward Hines, R. J. Dunham, John G. Keith, Joseph Austrian, J. J. Rardon, James Calbick, George J. Harris, C. W. Elphicke, Denis Sullivan, Chicago; Henry McMorran, Port Huron; W. S. Brainard, A. W. Colton, L. S. Sullivan, Toledo; C. A. Eddy, O. W. Blodgett, B. Boutell, Thomas Cranage, Howard L. Shaw, J. W. McGraw, Bay City; A. B. Wolvin, D. T. Helm, Duluth; David Vance, H. J. Pauly, W. H. Meyers, Albert Gibbs, F. W. Smith, F. L. Vance, Milwaukee; James McBrier, Edward Mehl, Erie, Pa.; F. J. Firth, Philadelphia; F. W. Gilchrist, Alpena; C. T. Morley, Marine City; R. I. Shuck, Sandusky.

Executive committee—James Corrigan, Cleveland, chairman; T. T. Morford, M. M. Drake, G. L. Douglas, Edward Smith, W. C. Farrington, all of Buffalo; J. H. Sheadle, W. W. Brown, Silas Hitchcock, M. A. Bradley, W. C. Rhodes, William Gerlach, J. C. Gilchrist, John Mitchell, William Becker, H. Coulby, J. E. Upson, H. A. Hawgood, W. C. Richardson, all of Cleveland; A. W. Colton, Toledo; L. C. Waldo and M. E. Farr, Detroit; David Vance and W. H. Myers, Milwaukee; C. A. Eddy, Bay City; D. Sullivan, C. W. Elphicke, John G. Keith, Chicago; D. T. Helm, A. B. Wolvin and E. J. Chamberlain, Duluth.

Committee on legislation—G. L. Douglas, Buffalo, chairman; E. T. Evans, P. P. Miller, M. M. Drake, W. A. Rogers, L. H. VanAllen, W. C. Farrington, G. W. Maytham, C. H. Donaldson, J. J. McWilliams and Edward Smith, Buffalo; L. C. Hanna, John Mitchell and James Corrigan of Cleveland; William Livingstone and B. W. Parker of Detroit; C. A. Eddy of West Bay City; Denis Sullivan and J. G. Keith of Chicago; F. J. Firth, Philadelphia; and F. L. Vance of Milwaukee.

Committee on aids to navigation—Capt. George P. McKay of Cleveland, chairman; L. J. Weeks, W. W. Smith, W. A. Hawgood, William Gerlach, Cleveland; J. J. H. Brown, M. M. Drake, Buffalo; Edward Morton, J. G. Keith, Chicago; Howard L. Shaw, Bay City; A. W. Colton, Toledo; A. Gibbs, A. E. Stewart and J. W. Westcott, Detroit.

The chair then announced the special committees to take charge of certain subdivisions of work as outlined at the morning session as follows:

Committee on grain shoveling—Edward Smith, W. C. Farrington, M. M. Drake, T. T. Morford, E. T. Evans, A. W. Colton, L. C. Waldo, J. C. Gilchrist, D. Sullivan, A. B. Wolvin and W. W. Brown.

Committee on permanent organization—The president, counsel and secretary.

Committee on the West Neebish improvement, the Weitzell lock, the lower Detroit river regulations and the southeast shoal lightship—William Livingstone, F. J. Firth, A. B. Wolvin, H. Coulby, James Corrigan, W. C. Farrington, C. W. Elphicke, David Vance, Howard L. Shaw and D. Sullivan. The following gentlemen were appointed to act as auxiliary to the special committee, two of their number to act with them: W. C.

McMillan, David Vance, M. M. Drake, A. A. Parker, C. W. Elphicke, W. W. Smith and Edward Morton.

#### TO UNDERTAKE BIG CHANNEL IMPROVEMENTS.

Mr. Goulder outlined briefly the work which this committee had before it. It really embraces the most important questions of a practical nature which confront the lake carriers. Mr. Goulder related that two expert engineers had reported upon the improvements at the Sault. One of the engineers favored the enlargement of the present route while the other favored clearing and deepening the West Neebish channel. After considerable investigation the lake carriers had come to the conclusion that the improvement of the West Neebish channel would be better. It would enable up-bound freight to use one channel and the down-bound the other and thus do away with a great deal of confusion. He also touched upon the difficulty presented by the fact that the Poe lock at the Sault, thought at one time to be ample for all purposes, is now unable to accommodate two of the largest boats on the lakes at the same time. He spoke of the proposition to increase the size of the Weitzell lock and of the construction of another channel at St. Clair flats, projects which, while not new, are of paramount interest. He also said that it was costing the association \$3,500 annually to maintain the lightship Kewaunee on the Southeast shoal, Point au Pelee passage, Lake Erie, and spoke of the movement to either have the government maintain this lightship or construct another in its place. Altogether he outlined a heavy program for the special committee and advised that it would require a great deal of pushing to have the things done. He held that the lake carriers had been very modest in their claims upon the general government and that the committee on rivers and harbors maintained the same view.

A communication was received from the grain shovellers' union at Buffalo that it was well satisfied with the present system of handling grain under the management of Supt. Thomas W. Kennedy. The grain situation at that port was accordingly definitely settled by the adoption of the following resolution:

"Whereas the system of handling grain in the port of Buffalo during the past two seasons under the able management of Thomas W. Kennedy has been most satisfactory and profitable to vessel owners as well as affording satisfactory compensation to the grain shovellers, therefore be it

Resolved, that it is the sense of this association that the system be continued and that the committee in charge continue the work under the same efficient superintendent."

#### VARIOUS RESOLUTIONS.

Mr. Denis Sullivan moved the adoption of the following resolution:

"That the Lake Carriers' Association respectfully but earnestly petition the honorable, the secretary of the treasury of the United States, to provide and suitably maintain under the supervision of the lighthouse establishment a vessel adequately equipped with the proper appliances for supplying with compressed gas, the gas buoys now established and such other gas buoys as may hereafter be established on the great lakes and the connecting waters thereof."

Mr. E. T. Evans of Buffalo moved as an amendment that the resolution be referred to the executive committee, but when it was put to a vote the amendment was voted down and the resolution was adopted.

A resolution was also adopted commending the new series of colored charts of the lakes which are being issued by the government engineer department.

The authorities of Buffalo harbor were urged in a resolution to remedy certain conditions at present obtaining at that port. It was represented that the channel is not of sufficient depth and is frequently obstructed by obsolete bridges.

Messrs. W. C. Farrington, E. T. Evans and C. H. Keep were appointed as a special committee to draft suitable resolutions of respect to the memories of W. E. Fitzgerald, David Carter and J. S. Dunham, who passed away during the year.

Capt. M. M. Drake offered the following resolution, which was adopted:

"The Lake Carriers' Association calls attention to the condition of things at the outlet of Lake Erie and requests that the proper department of government consider the question whether the deepening of the cut through the natural barrier does not have the tendency to lower the level of the lake, and also whether the increasing necessities of the commerce of Tonawanda and below may not be best met by enlarging the present Black Rock ship canal; and be it further resolved that copies of this resolution be sent to members of congress from the lake district and that they be urged to aid such improvements."

At a later session the foregoing resolution was adopted on motion of Capt. Drake.

It was voted to add slight compensation to the office of the chairman of the committee on aids to navigation.

Sorrow was expressed that Col. G. J. Lydecker was to be promoted by being transferred to a new post in Cincinnati. While they did not want to stand in the way of Col. Lydecker's advancement, still the vessel owners appreciated his services too much to lose him without a protest. Upon this point President Livingstone touched quite feelingly.

Capt. Alex. R. Sinclair called attention to the fact that under existing conditions it is impossible for an American tug or wrecker to assist an American or other vessels in distress in Canadian waters. The special instance which came under his observation was the distress of the steamer Preston on the north shore of Lake Superior. He sent his steamer, H. A. Root, to her relief, whereupon the steamer was seized by the Canadian authorities and a heavy fine imposed. The fine was later remitted, but the incident resulted in a great deal of trouble and annoyance. He suggested reciprocal relations on the subject of wrecking. The question was referred to the legislative committee. Adjournment was then taken for the day.

#### VESSEL OWNERS AND OTHERS IN ATTENDANCE.

Cleveland—George P. McKay, Edward Morton, Harvey D. Goulder, John A. Donaldson, William H. Becker, F. W. Jackson, Arthur Hawgood, Joseph F. Hayes, E. P. Lenehan, C. H. Sinclair, W. W. Brown, T. F. Newman, John Mitchell, Alfred Mitchell, J. A. Current, Oliver W. Upson, W. H. McGean, A. R. Rumsey, W. E. Chapman, J. H. Sheadle, R. B. Wallace, L. H. Van Allen, H. Coulby, H. A. Kelley, E. T. Laundon, A. W. Horton, E. T. Bierce, M. A. Bradley, John Corrigan, N. J. Boylan, Martin Connors, J. F. Leitch, John F. Wedow, W. H. Mack,



Frank Seither, Alexander Hine, W. W. Smith, O. C. Pinney, C. P. Gilchrist, John V. Tuttle, H. A. Hawgood, Chas. L. Hutchinson, S. H. Holding, Roy A. Williams, Frank Morrison, J. W. Farley, J. C. Gilchrist, A. J. Gilchrist, W. R. Bartlett, L. P. Smith, John Marron, F. D. Herriman, W. C. Richardson, W. L. Sherwood, John T. Kelley, Mark Hanlon, L. H. Ramage, E. L. Fisher, E. M. Carlton, Wm. Teare.

Buffalo—W. C. Farrington, C. H. Keep, J. J. H. Brown, M. M. Drake, John Green, E. T. Evans, E. T. Hitchcock, John J. Boland, Harvey L. Brown, G. W. Maytham, T. T. Morford, L. H. Van Allen, Edward Gaskin, C. W. Townsend, James Kennedy, A. J. Boland, William M. Barr, Thomas Kennedy, L. P. Goodale, J. H. Green, Frank J. Firth, Junius S. Smith, C. A. Brunn, John Manion, Edward Duthie, C. Lee Abel, Wm. Barr, Capt. Joseph Hullivan, Capt. John Johnson, C. Mahoney, D. J. Nelligan, John Connelly, Capt. M. Nagle, Wm. McNeff, Capt. Geo. Stevenson, Fred Smith, H. C. Harrison, H. B. Root, H. H. Smith, Wm. Graham, James McDougall.

Chicago—H. A. Foss, D. Sullivan, William H. Wood, R. J. Dunham, J. A. Calbick, Thomas Prindiville, J. J. Rardon, E. J. Fleming, Arthur C. Helm, Miles Barry, C. E. Kremer, Homer J. Carr, J. G. Keith, L. Windmueller, O. G. Orr, C. W. Elphicke, J. C. Evans, George L. McCurdy, W. W. Watterson, T. F. Joyce of Swift & Co., A. E. Schuyler, J. L. Frohman of Engel & Fagersten, W. D. Hamilton, F. H. Osborne, Charles Wallace, Edward Hines.

Detroit—William Livingstone, J. W. Westcott, L. C. Waldo, John C. Shaw, Henry Wineman, Jr., J. W. Millen, Stanley B. Smith, W. A. Livingstone, A. A. Parker, Martin O'Toole, Richard Cusen, E. T. Stewart, John H. Walsh, Capt. A. J. McKay, Capt. Geo. England, A. Geo. Mattson, C. B. Calder, Ralph Gray, C. W. Kochter, Nelson Blair, J. Sheehan.

Milwaukee—David Vance, S. O. Neff, Capt. A. Gibbs, Henry Leisk, T. W. Sheriffs, William H. Meyer.

Miscellaneous points—H. L. Holden, Two Harbors, Minn.; William St. John of Safety Car Heating & Lighting Co., New York; H. A. Drury of the Standard Oil Co., New York; A. M. Carpenter, Capt. Forbes, H. E. Runnels, Port Huron; D. T. Helm, Charles H. Weeks, Alex. Sinclair, Duluth; E. C. Recor, St. Clair; F. W. Gilchrist, Alpena; John Craig, L. S. Sullivan, Toledo; Howard L. Shaw, O. W. Blodgett, Thomas Madden, William Sharp, Bay City; John Mullen, Amherstburg; N. M. Mills, Tonawanda; C. T. Morley, Marine City; G. A. Tomlinson, Duluth; E. T. Carrington, Bay City; H. J. Pauley, Milwaukee; J. P. Nagle, Toledo; Capt. A. B. Davis, Milwaukee; C. W. Payne, Erie; Joseph Shannon, Saginaw; Henry McMorran, Nelson Mills, John Mills, H. J. Kendall, D. E. Lynn, Geo. F. Lynn, Port Huron; J. L. Nessen, Manistee; Richard O'Connor, St. Clair; J. T. Garry, Saginaw; Thomas Dunford, Port Huron; James Harrow, Algonac; J. Jenkins, Frank Hart, Marine City; Moses Humphrey, Ashtabula.

## SECOND DAY'S PROCEEDINGS.

### CHANGE IN TONNAGE DUES FAVORABLE TO WOODEN VESSELS—DETROIT RIVER RULES, ETC.

Thursday morning's session, which was the concluding session of the meeting, was unusually quiet and a great many of the members were absent. The only thing which was really accomplished at the session was the disposition of the question of dues. Capt. J. C. Gilchrist asked for a reduction of the dues on wooden vessels. He said that he had thought of asking for a general reduction of dues, that would include steel ships also, but concluded that it would be wise to let the dues remain as they are on the steel vessels. "It is easier to pay 5 cents on a steel ship than 2 cents on a wooden ship," said Mr. Gilchrist. "The steel ship has many advantages over the wooden vessel. For instance, the steel vessel needs little repair and does not have to trim her load. The wooden vessels are constantly in need of repairs and the tonnage dues cut largely into their profits."

"Mr. Gilchrist might add also," said Capt. M. M. Drake, "that the steel steamer carries a larger cargo based upon tonnage and measurement than the wooden vessel."

Mr. Frank J. Firth of Philadelphia moved that the tonnage dues remain as they are with the exception that all wooden vessels of less than 1,800 tons net register shall pay 2 cents. This was carried.

The special committee appointed to revise the lower Detroit river regulations made the following report:

"It is recommended that no vessel shall pass another going in the same direction or meet without slowing down, or approach another nearer than 500 ft. between the upper end of Ballard's reef and the lower end of Bois Blanc island. Recommendation is also made that boats have the privilege of passing one another going in the same direction provided the overtaking boat shall pass the other outside of the stakes and at a safe distance. It is recommended that a patrol boat in charge of the United States revenue cutter service be stationed at that point to enforce all rules and regulations. It is urged that the legislative committee take immediate steps to secure the necessary appropriation for the revenue cutter service to enforce all laws and rules now in existence or any further rules and laws that may be adopted."

The wording of this resolution was held to be ambiguous, that is, that the second sentence qualified the first and left a doubt as to whether boats should pass or should not pass. It was held to be the sense of the committee that boats should not pass each other when going in the same direction. The entire report was thereupon referred to the committee on legislation with power to act. Of course such a regulation can only be made binding through congressional enactment. The channels referred to are in Canadian territory and there are other complications and conditions that did not exist in the Sault river when arrangements were made for rules governing the navigation of that waterway.

Maj. W. L. Fiske addressed the members briefly upon the new series of colored charts which the corps of engineers is issuing and also spoke of the efforts of the engineers to record the stages of extremely low water for several years back in order that the exact depths of water in the various channels might be indicated; in other words to record definitely the low water stage so that the mariner can depend upon at least as much water as is recorded. At present the actual depth of water is a matter of subtraction. This question is quite important and the Review will later have an article of considerable length upon it.

The matter was presented to the association of lighting the islands of Lake Superior with Pintsch gas after the keepers have left. Owing to the uncertainties of weather it is now necessary to take the keepers off before navigation is quite over, thus leaving these islands without lights at an extremely perilous time. The points mainly referred to are Standard Rock, Manitou island, Passage island, Outter island, Devil's island and Sand island. Upon motion of Mr. J. W. Westcott it was decided to recommend to the United States lighthouse board that these islands be lighted for this brief season with Pintsch gas which requires no attention.

### ENDORSEMENT OF LIFT BRIDGES.

The following resolution favoring the bascule type of bridge was unanimously adopted:

"As the art of bridge building is now sufficiently advanced to render unnecessary the building of artificial obstructions in the centers of navigable channels, this association respectfully requests the secretary of war to direct engineers of his department to withhold approval of center-pier swing bridges in such channels and to substitute therefor, when it is practical to do so and when the same can be done at no greater cost, some one the several types of vertical lifting bascule bridges which are successfully used in several lake cities, especially the crowded harbor of Chicago.

"I submit the foregoing," said Capt. Geo. P. McKay, "after observing the practical operation of lift bridges in Chicago and Cleveland. I am told that in recommending this type of bridge we would not be aiding a monopoly; that there are various patterns of bascules; that there are five concerns building them in Chicago and that none of them owning patents run shops of their own, but let out the work in competition, so that a city or corporation is in no wise restricted." With the rapid increase in the size of vessels and the growing value of dock space near bridges, this association should take action to make impossible such annoyances as the recent arrest of a ship master at South Chicago for refusing to move his vessel every time it was necessary to open and close a bridge."

Mr. F. H. Kremer of Chicago urged that the members of the association make some provision for the maintenance of a Sailors' Snug Harbor for the great lakes. Upon this subject he spoke with great feeling. He had no plan to propose but insisted that it was a subject which ought not to be allowed to lapse and that a system of obtaining revenue for the founding and maintaining of such a home should be devised. He assured the members that such an undertaking would outlive their memories and which would really be the one tangible thing that could be recorded of them fifty years hence. He said that many men go down to their old age, broken in purse and in health, through no fault of their own, and that such of them as have been associated with the upbuilding of the vessel interests of the great lakes should be assured of a place where they might end their days in comfort. Mr. Frank J. Firth also thought it a subject upon which action should be taken and suggested that the association consider a plan of incorporating itself into a permanent organization which would allow it to establish and to continue such an institution. A motion was carried to have the executive committee draft a plan of permanent organization and report it at the next annual meeting. Mr. J. J. H. Brown spoke of the case of Charles Gale, one of the oldest and best of lake captains, who is now an inmate of a Canadian poor-house.

### IN MEMORY OF DECEASED MEMBERS.

Mr. David Vance presented the following resolution in memory of the late William E. Fitzgerald:

"Since our last annual meeting we have been called upon to mourn the untimely death, by shocking accident, of William E. Fitzgerald. Into the circle of lake interests there never entered a man whose death more aptly suggests the old sad thought,

"There is no union here of hearts  
That finds not here an end."

"For to us who knew that sturdy, rugged character in its completeness it does not disparage to remember and speak of Will Fitzgerald as a winsome man, loving and lovable. In the business activities of the great lakes his merit won distinction and at an early age became a power. Wise, prudent, far-seeing, ambitious, he united with these qualities energy which seemed inexhaustible; courage, a broad generosity, a spirit of fairness, impregnable integrity, unimpeachable honor; rounding out and filling the full measure of a successful business man so completely as to command the highest respect; while through it all there was blended a great loving kindness and charity which endeared him in a singular and beautiful way to his fellowmen.

"And therefore resolved, that we extend to the family of our departed friend our sympathy in the loss of a husband and father, who was the embodiment of human love and kindness, while we mourn the loss of one of our strongest, best business men, one of our most highly esteemed members; our friend; that this memorial be spread upon the records of the association and a copy sent by the secretary to Mrs. Fitzgerald."

Mr. D. Sullivan spoke briefly about Mr. Fitzgerald, saying that love and ambition seemed to be the two guiding stars of his life. Mr. Charles H. Keep then read the following resolutions upon the death of Capt. James S. Dunham. The resolutions had been prepared by Messrs. W. C. Farrington, J. C. Evans, C. H. Keep and John Mitchell.

"The members of the Lake Carriers' Association had scarcely left the last annual meeting when they were deeply shocked at the sudden death of Capt. James Dunham of Chicago. Capt. Dunham had been a member of the Lake Carriers' Association from the date of its organization. He had taken a deep and active interest in its affairs, had filled efficiently and faithfully the highest office in the gift of the association and had frequently served on its committees and delegations at Washington and elsewhere. In addition to this public-spirited work for his fellow vessel owners, Capt. Dunham's name will ever be remembered for his indefatigable labors in behalf of the improvement of the Chicago river. As president of the River Improvement Association of Chicago, Capt. Dunham was both pioneer and leader. In the struggle to protect and improve the inner harbor at Chicago, with public sentiment at first strongly arrayed against him, with innumerable obstacles in the path of success, Capt. Dunham fought for his convictions, year in and year out, with the indomitable courage, persistence and ability, which were characteristic of the man. He lived to see the triumph of his idea, a complete revulsion of public sentiment in Chicago and the hearty cooperation of the city and federal government in the cause of harbor improvements on an extensive



scale. For this public service he laid the vessel owners of the great lakes under a debt of gratitude to him, which they can never repay. In his personal characteristics Capt. Dunham was a business man of high standing in the community where he lived. In a brief term of public service his ability made him one of the most prominent figures in the city government of Chicago. He was generous almost to a fault and a loyal friend in whose hearty greeting one could read the kindly and sincere feelings he had for his fellow men and especially for his fellow vessel owners. He will be sadly missed from our councils and from the circles of friendship which are so prominent a feature of our annual meetings, therefore be it

"Resolved, that as a mark of affection and esteem for Capt. Dunham, of grief for his untimely death and of respect for his memory, this preamble and resolution be inscribed on the minutes of the Lake Carriers' Association and a copy thereof be transmitted by the secretary to Capt. Dunham's family."

Messrs. A. A. Parker, John C. Shaw and L. C. Waldo presented the following resolutions in memory of the late David Carter:

"In the midst of the pleasure and good fellowship of this, our annual meeting, we are again reminded of the uncertainties of this life and called upon to mourn the absence of one of our best-known and most respected members, who has laid aside the burdens of life and gone to his long rest. In the death of David Carter one who stood for all that is truly manly in life was taken. His strength and tenderness, his sane and upright mind, his clean and lovable character endeared him equally to business associates, employees and friends. Thoughtful and just, he was a perfect employer, painstaking, earnest and single-hearted, he was an ideal business man in whose hands the largest interests were always safe. His going takes something out of life for all of us, and his absence will be long felt in this association and among his business associates, as well as by his more intimate friends and family. As a slight expression of the love and respect in which our absent member is held, we move the adoption of the following resolution:

"Whereas, it has pleased Almighty God to remove from our midst and take unto himself David Carter, our late associate,

"Resolved, that the most sincere regret and heartfelt sympathy of the Lake Carriers' Association, now in annual session, be extended to the family and friends of David Carter and that this resolution be spread upon the minutes of this meeting and a copy thereof furnished the family of the deceased."

Mr. William Livingstone spoke with considerable emotion regarding Mr. Carter's life work and paid a high tribute to his memory.

Adjournment was taken until the third Wednesday in January, 1903.

Mr. A. W. Horton, recently appointed western agent for the Pittsburg Coal Co., with headquarters in Cleveland, was at the Detroit meeting for the purpose of becoming acquainted with the vessel men. Mr. Horton comes from St. Paul. He assumes very important duties, as he will have charge of practically all affairs of the big soft coal organization at Lake Erie ports. Mr. Horton was very favorably spoken of by all the vessel men who met him. John A. Donaldson of Cleveland, who represents on the lakes a coal organization recently formed in competition with the so-called Pittsburg trust, was also at the meeting renewing an acquaintance that already covered practically the entire lake region, and was accompanied by N. C. Boylan, whose association with the business of selling fuel to steam vessels extends over a period of fifteen years or more. He has been at the work from boyhood and has the advantage of a personal acquaintance with, and the good will of not the ship owners alone, but all the ship masters. Mr. Boylan recently joined the coal interests represented by Mr. Donaldson, accepting with them the position of manager of their fuel department.

Many other representatives of large supply concerns that deal with the ships also mingled among the members of the association at the Cadillac. T. F. Joyce, representing the jobbing department of Swift & Co., Chicago, was there in the interest of plans which his company is making to secure a large share of the vessel business. He took advantage of recesses during the meetings to talk with various owners and seemed to have someone under his wing at every turn. The faculty of talking business to unsuspecting customers and at the same time causing them to feel that they are simply being entertained is certainly well exemplified at gatherings of this kind. J. L. Frohman of Engel & Fagersten, Chicago, manufacturers of Neptune boiler compound, distributed a unique souvenir. "My hobby is boiler compound," he said; "every man has his hobby,"—and then he presented the new acquaintance or old customer with a miniature metal hobby-horse that might be appropriately used as a watch charm.

#### MEETING OF LUMBER CARRIERS.

It has been said for some time past that an effort would be made at this year's meeting of the Lumber Carriers' Association of the Great Lakes to bring about the formation of a company that would take over and own practically the entire lumber-carrying fleet of the lakes. This was regarded as the only solution of the question of remunerative freights and the scheme was to issue a large amount of bonds in payment for the great bulk of the fleet, with cash to owners who would not accept bonds. If the details of such a scheme could be satisfactorily worked out, the promoters would still encounter great difficulty in the present attitude of capital towards such organizations, and so it turned out that the trust idea was not a very strong feature of the meeting of the lumber carriers. They are going ahead with their present organization, however, dealing with the longshoremen and with various matters in which mutual interests are involved. They hope also to accomplish by means of the present organization more than they have accomplished in the past in the matter of freights. Their meeting at the Hotel Normandie in Detroit was very well attended. The annual report showed a membership of 242 vessels, represented by 106 owners and aggregating 100,000 tons. This is about 75 per cent. of the lumber-carrying tonnage of the lakes. Receipts of the association for the year amounted to \$2,800 in round figures, and of this there was a balance of \$800 in the treasury with all bills paid. The principal officers elected for the coming year are F. W. Gilchrist of Alpena, president, and H. E. Runnels of Port Huron, secretary. Mr. G. W. Cottrell of Cleveland, secretary up to this time, will probably not relinquish altogether his connection with the association. It is proposed to retain his services in lines other than that of secretary.

### Annual Report of the Board of Managers Lake Carriers' Association.

OFFICE OF THE LAKE CARRIERS' ASSOCIATION,  
BUFFALO, N. Y., JAN. 14, 1902.

#### To the Members of the Lake Carriers' Association:

The board of managers of the association submits herewith its annual report, as follows:

#### MEMBERSHIP AND TONNAGE.

The tonnage enrolled in the association during the past year was 874,203 tons, an increase of 32,000 tons over the previous year. Considering the unusual conditions which prevailed at the opening of navigation last year and which prevented some fleets that have always been members of the association from coming in this season, the increase in tonnage makes a very gratifying showing, particularly as last year's tonnage showed a very large increase over all preceding years. The following table shows the tonnage of the association for a series of years beginning 1894:

1894	590,000 tons.
1895	618,000 "
1896	722,863 "
1897	687,237 "
1898	686,014 "
1899	760,866 "
1900	842,248 "
1901	874,203 "

In analyzing the tonnage figures for 1901, we find that of the total tonnage of 874,203 tons, 682,330 tons were made up of vessels of over 1,400 tons, paying the higher rate of dues, and only 191,873 tons were made up of vessels of less than 1,400 tons, paying the lower rate of dues. Every year the percentage of large vessels increases, in accordance with the well-known conditions which are revolutionizing the character of the freight carrying vessels on the lakes. The fleets composed entirely of vessels below 1,400 tons only furnished 55,812 tons of the total tonnage of the association, as compared with 87,999 tons of the previous year. The fleets of small vessels now only make up about one-sixteenth of the total tonnage of the association.

The past season has also been remarkable for concentration of ownership. The fleets of the United States Steel Corporation and J. C. Gilchrist now make up about 44 per cent. of our tonnage. An unusually large tonnage, principally of the larger class of vessels, is now in course of construction, and the association may therefore look for a considerable increase of tonnage next year.

#### FINANCES OF THE ASSOCIATION.

The annual report of George P. McKay, treasurer of the association, which is submitted herewith, is unusually interesting. It shows that the receipts and disbursements during the past year have been upon a much larger scale than in former years. Thirty-three thousand dollars of dues have been collected during the past year, as compared with \$26,000 collected during the previous year. The treasurer's report also shows the receipt of one item of \$12,816.14, being profit made by the operation of the grain shoveling at Buffalo during the season of 1900. The treasurer reports all bills paid and a balance on hand of a little more than \$1,000.

One of the items of the treasurer's report shows the receipt of \$1,675.00 from the United States lighthouse board, being a semi-annual payment to the Lake Carriers' Association for maintenance of lights in the lower Detroit river. This covers the half year from July 1, 1901, to Jan. 1, 1902. A like amount will be due from the lighthouse board on July 1 next for the maintenance of the service during the navigable season in the first half of 1902.

Following the precedent of last year, the treasurer's report contains no information in regard to the grain shoveling at Buffalo during the season just closed. A full detailed report from the grain shoveling committee will be submitted by its chairman, showing the financial transactions in connection with grain shoveling during the season just ended. The amount of grain received at Buffalo during the past year was somewhat smaller than in the previous year, and the price of shoveling was reduced 5 cents per thousand bushels. The grain shoveling, therefore, will show but a small profit as compared with the previous year.

#### OPERATIONS OF THE SHIPPING OFFICES.

Shipping offices have been maintained during the past year at Cleveland, Chicago, Toledo, Buffalo, Ashtabula, Milwaukee, South Chicago and Conneaut. This list is the same as in former years, except that the Conneaut office was maintained for the first time last season. The total number of men shipped during 1901 through all the offices was 16,766, as compared with 14,987 in 1900 and 16,681 in 1899. The number of men shipped through each office, as compared with 1900, was as follows:

	1901	1900
Cleveland	3,567	3,354
Chicago	2,228	2,515
Buffalo	2,233	2,110
Ashtabula	2,320	2,289
Milwaukee	1,881	1,773
Toledo	1,012	1,138
South Chicago	1,974	1,828
Conneaut	1,551	....

Owing to unusual conditions prevailing in the early part of the season, and the addition of a new shipping office, the expense of maintaining the shipping offices shows a considerable increase over the previous year. In addition to the regular expenses, including the salaries of shipping masters, rent, telephone and office expenses of the various shipping offices, which amounted to \$12,463.11, there were extra expenses incurred by the shipping masters during the spring of last year, amounting to \$2,035.80, which brings the total cost of the shipping offices up to \$14,498.91, as compared with \$11,322.67 during the previous year, or about 44 per cent. of the total income of the association from dues, as compared with 40 per cent. in 1900. This increase in the cost of the shipping offices during the past season was unavoidable. For any explanation thereof desired by



any member of the association, such member is respectfully referred to the treasurer. It is expected that during the coming year extra expenses will not be incurred and the cost of the shipping offices will return substantially to the figures of 1900, allowance of course being made for the establishment of the Conneaut office.

#### GRAIN SHOVELING AT BUFFALO.

The grain shoveling at the port of Buffalo has been done during the past year under the supervision of the grain shoveling committee appointed at the last annual meeting, consisting of the following members of the association: Messrs. Edward Smith, W. C. Farrington, M. M. Drake, C. A. Brunn, A. W. Colton, L. C. Waldo, A. B. Wolvin, H. Coulby, James Corrigan and D. Sullivan. On account of his residence at Buffalo, Mr. Edward Smith was made chairman of the sub-committee having immediate charge of the work. The work has again been done under the superintendence of Thomas W. Kennedy. For a more detailed account of the operations at Buffalo in this department, reference is made to the detailed report which will be submitted at this meeting by the chairman of the grain shoveling committee.

#### PRIVATE LIGHTING IN 1901.

One of the most important features of the association's work during the past year has been in connection with the maintenance of private lights. For about fifteen years the vessel owners on the lakes have been maintaining a system of private lights in the lower Detroit river at their own expense. These lights were situated either on Canadian soil or in Canadian waters. Inasmuch as the United States government could not construct or own lights on the Canadian side of the boundary line, an effort was first made in congress two years ago to secure an appropriation which the lighthouse board could use for the purpose of contracting with the Lake Carriers' Association for the maintenance of these lights. During the session of 1900 this appropriation was inserted in the sundry civil bill in the senate, but was stricken out in conference and failed. Last season the effort was renewed, and with the assistance of Senator McMillan, Senator Hanna and Congressman Burton, provision was made in the sundry civil bill for placing a small sum of money in the hands of the lighthouse board, which could be used to take care of these private lights. A contract was entered into between the lighthouse board and the Lake Carriers' Association for the maintenance of the lower Detroit river lights, by which the Lake Carriers' Association agreed to maintain them during the navigable season from July 1, 1901, to July 1, 1902 at the price of \$3,350.00, payable in two semi-annual installments. On Jan. 1, 1902, the first installment of \$1,675.00 was received from the lighthouse board, as shown in the treasurer's report. This practically relieves the association of the expense which it has borne since its organization for lighting in the Detroit river, and the members of the association are to be congratulated that a way has at last been found to have these essential lights taken care of at government expense. It has never seemed a reasonable proposition to vessel owners that the United States government should construct a channel like the Limekiln crossing, at an expense of a million dollars, and should then leave this most important and difficult of the lake channels to be lighted by the individual effort of vessel owners. It has taken a long time to bring about the desired result, but it has at last been accomplished. Provision, however, for these lights is made in the form of an annual appropriation in the sundry civil appropriation bill, and care must be taken during the present and future sessions of congress to see that this provision is not forgotten or left out of the bill; otherwise the expense will again be saddled upon vessel owners. The thanks of the association are especially due to Senator McMillan for his invaluable services in this matter.

While the association has thus been relieved of one important item of private lighting expense, it has found itself confronted with a new lighting project, which has occupied the attention of the committee on aids to navigation during the past year. Numerous accidents and detentions in the vicinity of Southeast shoal, Lake Erie, brought an imperative demand from the members of the association that this shoal should be properly lighted. At a meeting held in Cleveland a committee, of which Capt. George P. McKay was made chairman, was appointed to charter a suitable vessel, fit her out as a lightship and station her at Southeast shoal. Capt. McKay's associates on this committee were as follows: Messrs. H. Coulby, Edward Morton, William Gerlach and W. W. Smith. Acting with the authority thus conferred upon them, this committee chartered the schooner Smith & Post and fitted her out as a lightship at an expense of about \$1,840.00. The lightship was located at Southeast shoal and was on her station only a short time when it was entirely destroyed by fire. The matter was then taken up again, and at a meeting of the executive committee of the association, the committee having the matter in charge was authorized to purchase the steamer Kewaunee at the price of \$10,000. This vessel was purchased out of the fund made available out of the profits of the grain shoveling of 1900. A considerable amount of money had to be expended to fit out the new boat properly for the service, the cost of such fit-out being \$3,742.14. This includes about \$500 paid to the lighthouse board for lanterns belonging to the government. Our certified check for this amount will be returned to us when we return the lanterns in good order. In addition to the cost of fitting out the vessel, the expenses of the committee in looking up suitable vessel, the wages of the crew, fuel, provisions, etc., required about \$1,700 additional. The annual cost of maintaining this lightship, including the services of the crew, fuel, provisions and a reasonable allowance for repairs and maintenance, is estimated at \$3,500.00 a year. An effort should be made during the present session of congress to increase the amount rendered available in the hands of the lighthouse board for private lighting, so that the board can contract next season with the association for the maintenance of this lightship as well as for the lights in the lower Detroit river. We do not anticipate that there will be any great difficulty in securing this provision in the appropriation bill or inducing the lighthouse board to enter into a contract with the Lake Carriers' Association to maintain this lightship until a government light is stationed at the shoal.

As soon as the association decided that a light at Southeast shoal was necessary, the matter was taken up by the executive officers of the association with the lighthouse board, with a view to securing a government light at this point. The board ordered an investigation by the district officers of the tenth lighthouse district, who reported in favor of a govern-

ment lightship, preferably built of steel. This report has been approved by the lighthouse board and a communication, recommending an appropriation of \$50,000 for a steel lightship, has been transmitted by the treasury department to congress. A bill has been introduced in the United States senate by Senator McMillan and the matter in the house of representatives is in charge of Representative Burton of Cleveland. It is important to the association that favorable action on this matter should be obtained by congress at this session.

In one respect the Lake Carriers' Association lightship has served as an admirable model for the lightships in the government service. The vessel remained on her station until Dec. 17, when the last boat belonging to the association had passed.

Before concluding reference to the lighting service on the lakes, attention should be called once more to the early closing of some of the important light stations of the government on the great lakes. The officers of the association had this matter up with the lighthouse board in connection with the closing of the Passage island light station. Public announcement was made in November that this station would close on Nov. 25. As soon as this announcement was made the Lake Carriers' Association requested the lighthouse board to keep the station in operation until the close of navigation. Considerable correspondence with the board and with Com. Wilson, inspector of the eleventh lighthouse district, followed, with the following result: The board reported that they were unable to keep the station open any later than the date advertised for closing, unless the Lake Carriers' Association would make a clear guarantee to remove the keepers from the station, and that this guarantee should be of such a character that there would be no doubt of our ability to carry it into effect. At a meeting of the executive committee, held in Cleveland, it was decided that the association was not in position to make such a guarantee. It appeared that a matter of life and death of the keepers was involved, as they were not provided with fuel and rations sufficient to permit them to remain on the island for the winter in case their removal at the close of navigation was rendered impossible by weather conditions. The association then urged upon the lighthouse board that in the future it would modify its arrangements at this station and others similarly situated, so that rations and fuel might be provided for the keepers, the lights kept open until the close of navigation and the keepers then removed, if possible; otherwise, if the removal of the keepers proved impossible, they could remain on their stations during the winter. We are happy to state that the board considers this proposal a reasonable one and has assured the association that it will take up the question of keeping Passage island light in operation until navigation is closed on account of ice, and will make before the close of another season suitable arrangements whereby this can be accomplished.

#### BUFFALO HARBOR.

In the fall of 1900 the members of the Lake Carriers' Association residing in Buffalo were urged by a meeting of the executive committee held at Cleveland, to take up with the municipal authorities the improvement of the inner harbor at Buffalo. It was represented that vessels of the association were subjected to considerable delays at Buffalo on account of low water. With the aid of the harbor committee of the Buffalo Merchants' Exchange an agitation for the improvement of harbor conditions at Buffalo was begun, which has resulted in an appropriation being made by the common council of \$100,000 for the removal of hardpan in the inner Buffalo harbor, abreast of the Watson elevator. This will remove the chief cause of delay. Provision was also made for a new bridge, without center abutments, across the Blackwell canal at South Michigan street. This will remove another cause of detention of vessels at Buffalo, conditions at this bridge having been such during the past few years that heavily-loaded vessels of the larger type could not pass through the draw without unloading part of their cargo. The action of the executive committee of the association in this matter and the result which followed are a good instance of the many ways in which vigilant action on the part of the association can benefit the carrying interests.

#### RIVER AND HARBOR BILL.

Through unfortunate legislative complication the river and harbor bill failed in the last hours of the last congress. The bill provided for an unusual number of important projects on the great lakes, and its unfortunate failure has delayed the work. A new bill is in course of preparation, however, and is in the hands of practically the same committee which framed the last bill, and we can reasonably expect that the interests of lake navigation will be well provided for. It is expected that the new bill will contain a section providing for the appointment of an international commission on the subject of maintenance of lake levels. If this is done it will be largely due to the efforts of Mr. Frank J. Firth, chairman of the committee of the Lake Carriers' Association having this matter in charge. Mr. Firth has seen for many years that the important subject of maintaining the lake levels could only properly be dealt with by means of an international commission. The new methods of developing and utilizing water power, particularly in connection with electric smelting and electrical transmission of power to considerable distances, make it certain that at every point where there is a considerable fall of water in the connecting waterways of the Great Lakes, water power will be developed to the fullest extent. This will divert the water from existing channels, and unless the government authorities and the vessel interests on the lakes are alert to protect their interests, they will find that the interests of navigation are injuriously affected. Injury of this kind is particularly likely to occur, because a lowering of the levels of the lakes must necessarily be gradual and a matter of inches. Moreover, owing to variations in the natural levels of the lakes from year to year, due to annual rainfalls, above or below the average, and hourly changes in the levels due to barometric and weather conditions, it is extremely difficult to tell when and how the levels of the lakes are being lowered. Vessel owners will find that they have less water for their ships, but when the navigation interests or the United States government goes into court to prove that the lowering of the levels of the lakes is due to the power developments, they will find so many other conditions affecting the lake levels that it will be extremely difficult to make the proof. If the injury is to be prevented, therefore, it is very desirable that action should be taken promptly. After millions have been spent in developing power plants, it is not an easy thing to induce the government, even if it has the necessary authority, to prevent the use of



water power from injuriously affecting navigation. During the last session of congress an agreement was arrived at in conference at Washington between the owners and managers of the power company at Sault Ste. Marie and a committee of the Lake Carriers' Association, and a bill was drawn which would protect the interests of navigation and which was pronounced by the power company to be satisfactory to it. No steps have been taken, however, on the part of the power company to have the bill agreed upon at Washington enacted into law. Meantime the work of the power company at the Sault is proceeding rapidly. The company has begun the construction of remedial works at the head of the rapids which they claim will obstruct the flow of water over the rapids to such an extent as to compensate for the draft of water through the power canal. These remedial works, however, are located on the Canadian side of the international boundary line, and beyond the jurisdiction of the United States government. The importance of this matter and the critical condition which the work has now reached, render it very desirable that the power company should inform the vessel interests of their purpose with respect to the bill agreed upon at the Washington conference last year, and if the power company has decided to drop this bill or even to oppose its enactment by congress, the matter should again be taken up by the Lake Carriers' Association and a decision as to the best course to follow should be arrived at without delay.

#### MISCELLANEOUS MATTERS DURING THE PAST YEAR.

Last year's report contained reference to a plan under consideration by the Lake Carriers' Association for a federation of the employes on lake vessels whereby owners and men should join in supporting a fund to provide benefits to be paid employes in case of accident. Various meetings were held, at which the details of the proposed benefit fund were carefully considered, and a detailed plan was pretty thoroughly worked up. The labor conditions which prevailed at the opening of navigation last spring, however, were such as to render it inexpedient to put this plan into effect at that time. The matter has therefore been held in abeyance, but the considerable work already done will be available in the future if the time shall come when the members of the association desire to revive this plan.

It is not necessary in this report to enter into a detailed discussion of the delays involved in getting vessels of the association into commission last spring on account of labor troubles. At a meeting of the executive committee, held in Cleveland last spring, it was voted unanimously that the association as an association should not take part in fixing salaries of engineers on lake vessels during 1901. The matter was left to each individual owner to settle with his own engineers, and the head of the engineers' organization was officially informed to that effect.

A matter which has been considerably discussed during the past year, and which may come before the annual meeting for further consideration, is the proposed regulation of navigation in the lower Detroit river, under rules prescribed and enforced by the government on lines similar to those now prevailing in the St. Mary's river. The subject is one which should have most careful consideration.

Appropriate action will be taken by the association at its annual meeting expressing the sorrow and regret of the members of the association at the death since the last meeting of two of its prominent members—David Carter and William E. Fitzgerald. It would be hard to name two members of the association whose loss would be more deeply deplored. David Carter was a veteran in the lake service, known and respected by all vessel owners, who lived a life full of honors and usefulness. William E. Fitzgerald died under most distressing circumstances, in the very prime of life and at a time when he was becoming a more and more important figure in connection with lake navigation. He always attended the annual meetings of the association and took a very active interest in its affairs and his absence at this meeting will be a grief to all our members.

Respectfully submitted on behalf of the board of managers,

By A. B. WOLVIN, President.

CHARLES H. KEEP, Secretary.

#### A BIG MINING PROPERTY.

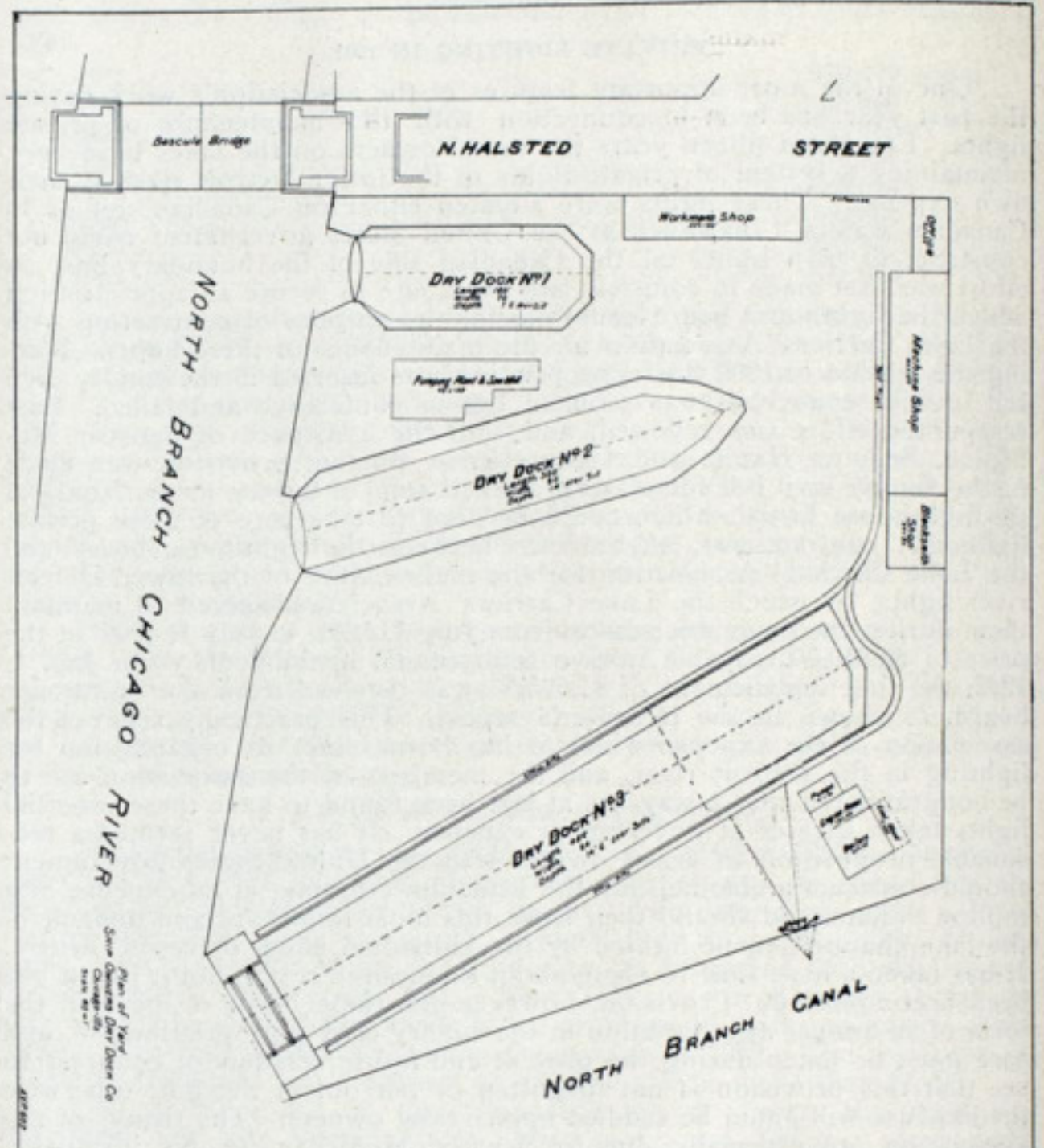
The tracks of the Iron Range railway have now been completed to the Stevens mine, near the town of Mesabi. It is likely that the Stevens will now become immediately one of the big producing mines of northern Minnesota. The deposit, according to one authority, is 40,000,000 tons, assuring the property a long period of activity. It is expected that the mine will rank as a shipper with the biggest mines on the ranges, with the possible exception of the Fayal, which has passed the 1,600,000 ton mark and is far in advance of all other individual mines in this country. The Stevens mine will be an open pit proposition, the earth cap being removed from the deposit and the ore then loaded into the cars with steam shovels. The milling system, which is becoming more and more in vogue in iron ore mining in Minnesota, may also be used. It is expected that the Stevens mine will rank with the Mahoning, Mountain Iron and Stevenson as regards importance as an iron mine. Contractor Runquist has also begun work with a large force to do the grading for the tracks and sidings at the Pettit and Sprague mines, situated between McKinley and Sparta. These are new properties that are to be developed, but are outside of the steel corporation.

The senate committee on commerce has authorized a favorable report on Senator Nelson's bill for the creation of an executive department of the government to be known as the department of commerce. Besides providing for an additional member, known as a secretary of commerce, the bill provides for the office force as well. The following bureaus would be embraced in the new department: Life-saving service, lighthouse board, marine hospital service, steamboat inspection service, bureau of navigation, bureau of immigration, bureau of statistics, the United States coast and geodetic survey, the commissioner of railroads, the census office, the patent office, the department of labor, and bureau of foreign commerce.

Frank N. Isham of Mystic, Conn., has accepted the superintendency of the American Power & Construction Co., Brooklyn, N. Y., which will establish a yacht basin at Bensonhurst, L. I. He will, however, not abandon his Mystic works.

#### WORKS OF THE SHIP OWNERS' DRY DOCK CO.

The Ship Owners' Dry Dock Co. of Chicago has about completed improvements at its yard in Chicago, which make it a completely-equipped modern plant for repairs to either steel or wooden vessels. Several large jobs for steel repairs have been taken already for the winter, among others the converting of the steel barge Australia, owned by James Corrigan of Cleveland, into a steamer. There are also a large number of wooden vessels awaiting repairs. The largest dock at the plant measures 480 ft. in length, 84 ft. width on top and 60 ft. width at the bottom. There is 17 ft. of water over the miter sill and the dock can take any vessel that can be brought up the north branch of the Chicago river. Lying on the point of land at the junction of the river and the Ogden canal the dock can be entered without any turning. The middle dock is to be lengthened to 335 ft. The third dock, lying beside North Halsted street, has been shortened to 160 ft. in length for sailing vessels, small steamers and tugs. The shops are all built and the equipment of the yard is modern in every respect, pneumatic machinery being installed and a railroad



being laid all around for the self-propelling cranes. The company has not attempted to install a plant for machinery repairs as there are many excellent shops of this kind in the neighborhood. The company has purchased a tract of land north of the section which was formerly owned by Miller Bros., upon which it proposes to lay down a steel steamer in the course of the present year. It has first of all, however, devoted its energies to perfecting its dry dock plant. Ship building will come later. Mr. C. A. Macdonald, president of the company, denies the report that the directors are considering a proposition to erect a ship yard for the construction of steel vessels at Manitowoc or Milwaukee.

#### THE SHIPPING BILL.

It is too early to predict the fate of the shipping bill before the present congress. It will have to show its passport at every step. There was some discussion this week in the committee regarding the clause requiring ships to carry American crews. It was finally decided to leave this clause as it stands. It provides that vessels under contract shall for the first two years have at least one-fourth of their crews American citizens; for the next three succeeding years at least one-third, and for the remainder of the contract shall have half of their crews Americans.

It is proposed in the bill that vessels carrying mails shall be steel screw steam ships, divided into seven classes, "according to gross registered tonnage and capacity to maintain at sea in ordinary weather the following speeds." Exception was taken to this language by Senator Perkins, who has had much experience in shipping. He wanted to amend the bill so as to provide for the payment of the subsidy on basis of average speed made during a trip or voyage. Senator Frye expressed great reluctance to changing his bill, which he said was perfect. The matter was therefore passed over without change.

The bill expressly excludes vessels engaged in coasting trade from receipt of any mail or general subsidy. This would seem to prevent vessels in the Philippine trade from securing the benefits of the subsidy in case coastwise navigation laws are extended to the archipelago. American vessels coming from the Philippines to the United States, however, are provided for in the bill on the same basis as though they came from a foreign port, and are entitled to the same subsidy.

It is estimated by members of the committee on commerce that the subsidy as a whole is somewhat more than is paid to the German, French and British vessels. The amount to be received by sailing vessels on the Atlantic coast is estimated at about \$450,000, and on the Pacific coast at about \$490,000. On steam vessels the subsidy will be much greater on the Atlantic than the Pacific coast, both on account of the higher subsidy and the larger number of steam vessels.



**NEW OFFICERS AMONG LAKE SHIP MASTERS.**

Buffalo lodge—President, Capt. J. H. Coleman; first vice-president, Capt. Walter Robinson; second vice-president, Capt. Charles A. Potter; secretary, Capt. John Perew; treasurer, Capt. John Hall; chaplain, Capt. Charles McMillen; marshal, Capt. Daniel Coughlin; warden, Capt. Alexander Kelley; sentinel, Capt. P. O'Neil; delegate to grand lodge meeting in Washington, Capt. J. H. Coleman; alternate, Capt. Walter Robinson.

Cleveland lodge—President, Capt. S. C. Allen; first vice-president, Capt. C. H. Woodford; second vice-president, Capt. A. J. Greenley; treasurer, Capt. Thomas Jones; secretary, Capt. O. Oleson; delegate to grand lodge meeting in Washington, Capt. S. C. Allen; alternate, Capt. J. A. Holmes.

Toledo lodge—President, Capt. Geo. H. Burnham; first vice-president, Capt. James Skeldon; second vice-president, Capt. F. D. Lamb; secretary and treasurer, Capt. E. G. Ashley; chaplain, Capt. H. Durand; marshal, Capt. G. V. Sage; warden, Capt. E. Denville; sentinel, Capt. Byron Warner.

Marine City lodge—President, Capt. J. M. Shackett; first vice-president, Capt. John Jenkins; second vice-president, Capt. Richard Jackson; secretary, Capt. F. C. Folsom; treasurer, Capt. James Taylor; chaplain, Capt. John McDonald; marshal, Capt. A. R. Beall; warden, Capt. Hector Brown; sentinel, Capt. David Carrier; delegate to grand lodge meeting in Washington, Capt. J. A. Ward; alternate, Capt. Jno. Jenkins.

Chicago lodge—President, Capt. W. D. Hamilton; first vice-president, Capt. D. A. Curran; second vice-president, Capt. A. Gallagher; treasurer, Capt. Wm. W. Shaw; secretary, Capt. F. B. Higgle; delegate to grand lodge meeting in Washington, Capt. W. D. Hamilton; alternate, Capt. A. Gallagher.

Milwaukee lodge—President, Capt. Henry Leisk; first vice-president, Capt. H. W. Van Patten; second vice-president, Capt. Peter A. Anderson; treasurer, Capt. John McCoy; secretary, Capt. John McSweeney; delegate to grand lodge meeting in Washington, Capt. Daniel C. Sullivan; alternate, Capt. John Cochrane.

Detroit lodge—President, Capt. Wm. Roach; first vice-president, Capt. Wm. Crosby; second vice-president, Capt. Wm. McClean; treasurer, Capt. Tim LeMay; secretary, Capt. Geo. A. Sims; warden, Capt. John McAlpine; sentinel, Capt. Thos. J. Carney; delegate to grand lodge meeting in Washington, Capt. Wm. Roach; alternate, Capt. Murray L. Millen.

Port Huron lodge—President, Capt. A. C. May; vice-president, Capt. P. F. Powell; second vice-president, Capt. James W. Montgomery; treasurer, Capt. D. M. Sinclair; secretary, Capt. M. A. Budd; delegate to grand lodge meeting in Washington, Capt. C. C. Balfour; alternate, Capt. A. C. May.

**NEW OFFICERS AMONG MARINE ENGINEERS.**

Saginaw (Mich.) lodge—President, A. G. Moll; vice-president, Richard E. Nantell; chaplain, W. P. Whalen; treasurer, John Henry; financial secretary, Walter Henry; recording secretary, Geo. A. Threasher; corresponding secretary, Harry E. McArthur; conductor, Alexander Frazer; doorkeeper, Fred Pflueger; representative to national convention, John Henry.

South Haven (Mich.) lodge, No. 102—President, W. H. Tyler; vice-president, Chas. W. LaBounty; recording secretary, Harry E. Bullen; corresponding secretary, Fred W. Linsemeyer; financial secretary and treasurer, Perry N. Knaggs; board of trustees, Perry N. Knaggs, A. C. Krogman, Ralph Peterson; representative to national convention, Perry N. Knaggs; alternate to convention, Walter L. Rounds.

Duluth (Minn.) lodge, No. 78—President, Lewis Griggs; first vice-president, R. F. Barrows; second vice-president, John Plase; secretary, F. A. Rehder; treasurer, Armour Harvey; trustee, J. P. Burg; delegate to national convention, R. F. Barrows; alternate to national convention, L. McNamara.

Thunder Bay lodge, No. 85, Alpena, Mich.—President, Horace Carter; vice-president, William Hamilton; recording secretary, Chas. Warwick; corresponding secretary, G. H. Miller; financial secretary, Chas. Warwick; treasurer, Harry D. Irwin; trustees, William Hamilton, Thad. Kneale, Richard Piepkorn; representative to national convention, Chas. Warwick; alternate to convention, William Hamilton.

Sandusky (O.) lodge, No. 48—President, George Moore; vice-president, Phil. Mayer; treasurer, Wm. Mayer; financial and corresponding secretary, C. V. Hart; recording secretary, Carl Becker.

Huron lodge, No. 43, Port Huron, Mich.—President, A. J. Wilson; first vice-president, George Robin; second vice-president, James M. Oag; recording secretary, James A. Southgate; corresponding secretary, Thomas Coyle; financial secretary, Walter G. Thorn; treasurer, Edward Egan; conductor, Louis Hythaler; chaplain, Robt. J. Smith; doorkeeper, Henry Rondeau; representatives to national convention, George H. Bowen and A. J. Wilson.

Grand Haven (Mich.) lodge, No. 76—President, Edwin Bryce; vice-president, Robert M. Bloecker; financial secretary, Ralph Van Tall; recording secretary, George Middleton; corresponding secretary and treasurer, Orson Vanderhoef; chaplain, John Doyle; conductor, Hugh Mulligan; doorkeeper, Emil Fritz.

Erie (Pa.) lodge, No. 39—President, John Bradley; vice-president, John Whitesel; recording secretary, Frank Feeney; corresponding secretary, Frank Buchner; financial secretary, Edward Crossly; treasurer, James Hunter; delegate to national convention, Edward Crossly; alternate to national convention, W. J. Swain.

Detroit (Mich.) lodge, No. 3—President, Wm. F. Taylor; vice-president, Walter F. Gregory; recording secretary, E. R. Dungan; corresponding secretary, A. L. Jones; financial secretary, F. Kenyon; treasurer, E. R. Blanchard; representatives to national convention, A. L. Jones and Geo. M. Milne.

Cleveland (O.) lodge, No. 2—President, H. T. McAuley; vice-president, G. L. Allen; recording secretary, Arthur Hyde; corresponding secretary, Geo. Averill; treasurer, Wm. H. Kennedy; trustees, Chris. Castle, H. T. McAuley, Evan Jenkins; delegates to national convention, Evan Jenkins, H. T. McAuley.

New York City lodge, No. 33—President, L. L. Bernier; first vice-president, Frank Houghton; second vice-president, G. Hamilton; recording secretary, W. J. Coutant; corresponding and financial secretary, W. J.

DuBois; treasurer, F. I. Becknard; business manager, Daniel Murphy; delegates to national convention, Wm. F. Yates, J. McG. Sterritt, Robt. Jones, J. J. Harrison, W. J. DuBois, L. L. Bernier, Milton Fritts, Robt. Gibson, Frank McKee, Frank Houghton, Thos. H. Brown; alternates to national convention, E. H. Everett, P. J. McDermott.

Saugatuck (Mich.) lodge No. 67—President, Wm. P. Wilson; vice-president, Henry Randall; recording secretary, Wm. Edgecomb; corresponding secretary, Wm. S. Bradley; secretary and treasurer, James K. Dole; chaplain, N. J. Rhode.

**NEW YORK STATE CANALS.**

An Albany (N. Y.) dispatch announces that there is a growing danger that the whole plan of Erie canal improvement for this year may be jeopardized by the desire on the part of some of the canal men to extend the improvement to the Oswego and Champlain canals. Assemblymen living along the routes of the Oswego and Champlain canals are anxious to have them included in the improvement. Those who stand by the main proposition as recommended by Governor Odell fear that if the attempt to load down the bill with a number of side improvements is persisted in, the result will be the failure of the whole plan. They say that the cost of improving the Champlain canal would amount only to about \$3,000,000, which could be provided for gradually by a yearly appropriation. The state could appropriate \$1,000,000 a year without having to provide for a referendum and by this means the improvement of the Champlain canal could be completed about as soon as the improvements of the Erie.

It is the general belief of those who have studied the canal question that the real need of the time is the improvement of the Erie canal by the enlargement of the locks on the Erie so as to accommodate two 1,000-ton boats and to deepen the canal to 9 ft. as in accordance with the improvement begun in 1896. If this work can be undertaken at once, they believe that the results will be so good that there will be no difficulty in making any further improvements that may be desired. They do not believe, however, that it will be possible to enlarge upon the plan recommended by Governor Odell to the extent of including in the improvement the Champlain and Oswego canals. If an adjustment of the difficulties that have arisen over the enlargement of the two side canals can be had the canal bill may be put in the first of next week. It has now been decided that one bill will suffice and that both propositions will be included in that bill—the enlargement of the locks which will cost \$13,700,000 and the deepening of the canal which will cost \$15,100,000. It was found upon examination of the constitution that the matter could not be submitted to the people in two separate bills.

**THE KAISER'S YACHT.**

It is estimated that when the Kaiser's yacht leaves the ship yard of Townsend & Downey, New York, it will have cost \$175,000. The yacht measures 160 ft. over all, 120 ft. on the water line, 27 ft. beam and 15 ft. draught. The yacht is what is known as a fore-and-aft schooner rigged, keel type and flush deck. The masts will be of Oregon pine, specially selected, 105 ft. in height. The longest boom will be 85 ft. in length. All the sail cloth and spars have been made by special order. The deck work, planksheers, rails, companionhoods, coamings, skylights and other deck finishings will be of the finest teak, while the saloons and cabins will be finished in mahogany and other hard woods, handsomely carved. The interior arrangement was largely suggested, in general plan, to the designers, Cary Smith & Barbey, by the Kaiser, through the German ambassador, Dr. von Holleben. Exactly in the center will be the main saloon. It will measure 20 by 27 ft. Aft of this will be the Kaiser's private stateroom, and aft of that four private staterooms for guests. Connecting with the Kaiser's stateroom, or owner's stateroom, as the designers term it, will be a perfectly appointed bathroom and a bathroom connects with each of the other staterooms.

Forward of the main saloon are the officers' quarters, then the owner's galley and further forward the crew's galley. Furthest toward the bow are the crew's quarters, which will accommodate eighteen or twenty men, the number of seamen the yacht will carry. One launch and probably two will be carried and four lifeboats.

The kaiser has spared no expense to make his yacht one of the best that ever spread sail. Since the designs and plans were turned over to the building company Constructor Theodore E. Ferris has given the work of building the vessel his personal supervision. Frequently he has received suggestions from the kaiser, transmitted through the German ambassador.

One cause for delay in building the yacht was that specially rolled steel plates were required. The plates used vary in thickness from five-sixteenths to three-eighths of an inch. They were furnished by the Tide Water Steel Co. of Chester, Pa., and the frames and angles, also specially made, come from the Passaic Rolling Mills, Paterson, N. J. The yacht's lines are very similar to those of the Genesee. It is thought that, while the vessel has been designed particularly for comfort, it will clip the water at a 16-knot rate.

Many improvements are being made at the works of the Eastern Ship Building Co., New London, Conn. A large Ingersoll-Sergeant duplex compound steam and compound air end compressor is being installed in the power house. All the engines of the works are being changed to run condensing, and the Wheeler company of Brooklyn, N. Y., furnished a large surface condenser for use in the plant. A building is being erected south of the plate shop to enable a larger part of the laying off of material to be worked under cover. A new coal wharf with run has recently been built, and the contract was let a few days ago for a large wharf about 600 ft. long by 55 ft. wide; also for an elaborate set of overboard launching ways to take overboard the two large Pacific liners that the company is building for the Great Northern Steamship Co.

The Algoma Central Steamship line, one of the Clergue organizations, has purchased a first-class side-wheel steamer, which has a cabin capacity of 500 passengers, will carry 500 tons package freight, and has a speed of 16½ miles per hour. This steamer will be placed, with the opening of navigation, on the route between Toledo and Sault Ste. Marie, via the Canadian shore and North Manitoulin channel, giving a service of two trips per week, each direction. She is a Clyde-built steel steamer, and is designed particularly for the Ohio tourist traffic.



## ANCHOR LINE BOATS-SHIP YARD NOTES.

As announced a few weeks ago, the Erie & Western Transit Co. (Anchor line) of Buffalo is to have two new steel steamers completed for the opening of navigation in 1903. A meeting of officials of the company was held in Detroit during the Lake Carriers' convention to go over plans of the ships, which have been prepared by Mr. Frank E. Kirby of Detroit. Messrs. Frank J. Firth, E. T. and J. C. Evans were present, and Mr. John Marron of Cleveland and C. W. Payne of Erie were also called into the conference. The ships will very probably be built by the American Ship Building Co. The Review will very probably print plans of these vessels later on. One will be a passenger and freight steamer for Lake Superior service, and the other a freight steamer of 5,000 to 5,500 tons capacity for Lake Michigan trade. The more expensive vessel for Lake Superior trade will have about 100 staterooms for passengers with about 3,500 tons freight capacity. It is also the intention of the company to erect a freight house on valuable Detroit river front property purchased about a year ago.

It was decided at the annual meeting of the Dry Dock Association of the Great Lakes, held in Cleveland a few days ago, to continue in force the dock charges of the past year and the same rules and regulations. The following officers were elected: J. C. Wallace, Cleveland, president; Edward Smith, Buffalo, first vice-president; W. W. Watterson, Chicago, second vice-president; James E. Davidson, Bay City, secretary and treasurer.

A steel lighter, to be stationed at Detroit, will be built by the Great Lakes Towing Co., and it is the plan of the company to enlarge and improve its wrecking facilities. The lighter will be equipped with a 6-ton McMyler derrick and other appliances for wrecking work. The company will also fit up two lighters now in use with derricks and clamshell buckets. They will be stationed at the Soo.

The oil tank steamer to be built by the Craig Ship Building Co. of Toledo is for the Sun Co. of Pittsburg, which company recently purchased the steamer Paraguay for Texas oil trade. The new vessel is to be a duplicate of the Paraguay and will be built for the highest class of Bureau Veritas for the world's trade. Edward Gaskin of Buffalo, who represented the Pittsburg interests in the purchase and rebuilding of the Paraguay, is also to represent them in the construction of this vessel. Mr. Gaskin was recently appointed Buffalo representative of the British Corporation for the Survey and Register of Ships.

E. C. Recor, Marine City ship builder, has contracted to build a wooden hull for the engine and boiler of the steamer T. S. Faxton, which was destroyed by fire at that place last fall. Dimensions of the craft are not given, but she will no doubt be somewhat larger than the Faxton. The cost is put at \$25,000.

Capt. Samuel Neff of Milwaukee has let a contract to Johnson Bros. of Ferrysburg, Mich., for the construction of a Scotch type boiler to be placed in the steamer W. P. Ketcham. The boiler will be a duplicate of the one in the steamer Pentland, about 13 ft. in length and diameter.

The steamer Western States, second of the new side-wheelers being built for the Detroit & Buffalo line, will be launched at the Wyandotte works of the Detroit Ship Building Co. Saturday.

Abram Smith & Son of Algonac, Mich., have under way a large amount of repairs to wooden vessels. The list of vessels includes the steamers Robert Mills, Italia, Monohansett, St. Paul and Ida E., and the schooners Lizzie A. Law, W. K. Moore, Sophia Minch and Interlaken.

## SOME BEAUTIFUL CALENDARS.

The discovery of half-tone printing with its attendant processes in color has added greatly to the output of beautiful calendars. It is possible nowadays to produce for a few dollars a profusion of effects, which, not a long while since, money could not even purchase. Hence the sights which gratify the eye in the office and in the home, and indeed everywhere one may turn, are multiplying a thousand fold. It is obviously impossible to even approximate the amount of money spent annually in pictorial effects upon the calendars of business houses, but it undoubtedly proceeds to a considerable altitude in the scale of millions. This year, more than ever, has the output been both beautiful and costly. Since maidenly loveliness is the highest form of all beauty, publishers have not hesitated to record it with the camera and to appropriate the work of these artists who have been most successful in depicting it.

One of the most striking of calendars, as well as one of the most initially expensive, is that issued by the Champion Rivet Co., Cleveland, O. The figure, a young girl, nude, watching the dial, is most exquisitely modeled. It is both chaste and beautiful, the work of Alfred Lenz, and as a bit of modeling is the most perfect that we have had the pleasure of seeing. The clay design has been reproduced in half-tone from a photograph. This calendar, in originality of conception and beauty of workmanship, serves to head the list.

Rahtjen's American Composition Co.'s calendar represents a cruiser in dry dock. It is rather a clever combination of photograph and wash drawing and constitutes a striking advertisement for the company.

The Standard Automatic Releasing Hook Co., 17 State street, New York, repeat the picture which has done service for them for so many years—the launching of the lifeboat. It is quite appropriate. There is no better device on a lifeboat today than the releasing hook.

John S. Parsons, ship chandler and sail maker, Oswego, N. Y., has his calendar illuminated with his picture of a winking girl. While she is not quite as pretty a girl as the original Cissy (Miss Loftus), still the picture is fetching.

The calendar issued by Herbert Wright & Co., stocks and bonds, Cleveland, is one of the most striking of all. It is a hunting scene illustrating the disturbance of a party of sportsmen at dinner by the arrival of the dogs. The picture is in the new poster effect, which has latterly obtained great vogue. Altogether this calendar is an expensive bit of work.

Abram Smith & Co., ship builders and rebuilders, Algonac, Mich., illustrate their calendar with a photograph of the ice blockade in St. Clair river.

Alfred B. Sands & Son, yacht and marine plumbers, 135 Beekman street, New York, have a picture of a sailing ship rounding Cape Horn in a storm. It is a reproduction of a painting.

F. H. Pell, No. 11 Broadway, N. Y., has a color print of Witkowski's

newsboy, entitled "Making Up the Deposit." It is good both in composition and color.

M. A. Hanna & Co., Cleveland, issue a reproduction of Muse-Arnolt's painting, "The Pointers." It is in colors and has been faithfully reproduced.

The Ashton Valve Co., 271 Franklin street, Boston, Mass., has a picture of a very piquant miss upon their calendar, entitled "La Mademoiselle." It is from a photograph.

The Bourne-Fuller Co., Cleveland, issued one of the neatest calendars of the season. The illustration consisted of a beautiful photogravure reproduction of Keisel's painting, "The Duet."

Lane & De Groot, boat builders of Long Island City, N. Y., have embellished their calendar with a picture of the famous old frigate Constitution. While the drawing is doubtless technically correct it lacks the inspiring sweep of the pictures of the Constitution with which we are familiar.

## MONTHLY SUMMARY OF NAVAL CONSTRUCTION.

The monthly summary of naval construction shows progress as follows upon the warships in the various ship yards:

		Degree of completion, Per cent.	
		Dec. 1.	Jan. 1.
BATTLESHIPS.			
Name.	Building at		
Maine .....	Wm. Cramp & Sons.....	74	78
Missouri .....	Newport News Co.....	51	54
Ohio .....	Union Iron Works.....	43	43
Virginia .....	Newport News Co.....	0	0
Nebraska .....	Moran Bros. Co.....	0	0
Georgia .....	Bath Iron Works.....	4	6
New Jersey .....	Fore River S. & E. Co.....	4	5
Rhode Island .....	Fore River S. & E. Co.....	4	5
ARMORED CRUISERS.			
Pennsylvania .....	Wm. Cramp & Sons.....	8	13
West Virginia .....	Newport News Co.....	5	6
California .....	Union Iron Works.....	0	0
Colorado .....	Wm. Cramp & Sons.....	12	15
Maryland .....	Newport News Co.....	4	6
South Dakota .....	Union Iron Works.....	0	0
SHEATHED PROTECTED CRUISERS.			
Denver .....	Neafie & Levy.....	64	66
Des Moines .....	Fore River S. & E. Co.....	59	62
Chattanooga .....	Lewis Nixon.....	50	53
Galveston .....	Wm. R. Trigg Co.....	47	49
Tacoma .....	Union Iron Works.....	20	20
Cleveland .....	Bath Iron Works.....	70	72
St. Louis .....	Neafie & Levy.....	0	2
Milwaukee .....	Union Iron Works.....	0	0
Charleston .....	Newport News Co.....	0	0
MONITORS.			
Arkansas .....	Newport News Co.....	82	85
Nevada .....	Bath Iron Works.....	91	92
Florida .....	Lewis Nixon.....	77	79
Wyoming .....	Union Iron Works.....	75	75
TORPEDO BOAT DESTROYERS.			
Bainbridge .....	Neafie & Levy.....	99	99
Barry .....	Neafie & Levy.....	95	96
Chauncey .....	Neafie & Levy.....	98	98
Dale .....	Wm. R. Trigg Co.....	97	98
Decatur .....	Wm. R. Trigg Co.....	98	98
Hopkins .....	Harlan & Hollingsworth.....	77	79
Hull .....	Harlan & Hollingsworth.....	75	77
Lawrence .....	Fore River S. & E. Co.....	99	99
MacDonough .....	Fore River S. & E. Co.....	98	98
Paul Jones .....	Union Iron Works.....	85	85
Perry .....	Union Iron Works.....	89	89
Preble .....	Union Iron Works.....	87	87
Stewart .....	Gas Engine & Power Co.....	63	64
Truxton .....	Maryland Steel Co.....	80	81
Whipple .....	Maryland Steel Co.....	78	80
Worden .....	Maryland Steel Co.....	78	79
TORPEDO BOATS.			
Stringham .....	Harlan & Hollingsworth.....	98	98
Goldsbrough .....	Wolff & Zwickler.....	97	97
Blakely .....	Geo. Lawley & Son.....	98	98
DeLong .....	Geo. Lawley & Son.....	98	98
Nicholson .....	Lewis Nixon.....	97	97
O'Brien .....	Lewis Nixon.....	98	98
Thornton .....	Wm. R. Trigg Co.....	97	97
Tingey .....	Columbian Iron Works.....	74	74
Wilkes .....	Gas Engine & Power Co.....	93	94
SUBMARINE TORPEDO BOATS.			
Plunger .....	Lewis Nixon.....	50	56
Adder .....	Lewis Nixon.....	95	96
Grampus .....	Union Iron Works.....	51	51
Moccasin .....	Lewis Nixon.....	90	92
Pike .....	Union Iron Works.....	50	50
Porpoise .....	Lewis Nixon.....	85	88
Shark .....	Lewis Nixon.....	80	84

## MR SCHWAB ON THE INDUSTRIAL FUTURE.

Charles M. Schwab, president of the United States Steel Corporation, was interviewed by Le Journal in Paris last week and he spoke of combines in America. He was enthusiastic over business and optimistic of the future. According to the telegraphed reports Mr. Schwab said that countries where combines do not exist are destined to abandon the struggle for commercial supremacy. He said the combines have nothing to fear from socialism and that American workmen are better paid and happier under the system. He is even credited with saying that when people earn good wages their rights do not trouble them. Mr. Schwab said that the commercial power of the United States is unlimited and unlimitable; she will inundate France with her products and force the French industrial classes to abandon the struggle. America is only beginning. The Old World has no idea what the United States will become a quarter of a century hence. Mr. Schwab approved the French plan of industrial schools in the United States, but expressed his fears that the graduates of these schools, when they return to France, will be paralyzed by the old ideas prevalent in France and will do little or nothing.

The government has determined to establish an important naval station at Culebra island, near Porto Rico, which came into the possession of the United States through the Spanish-American treaty of Paris. Culebra island is advantageously situated for strategical purposes and an excellent harbor, with deep water, makes it better adapted for naval purposes than San Juan or Ponce.







steamers. Mr. Frank E. Kirby, designer of these steamers as well as the steamers of the other two lines, says they will in all probability be ready to go into commission as soon as they are wanted next season.

The principal dimensions are: Length over all, 362 ft.; hull beam, 45 ft.; beam over guards, 80 ft.; molded depth, 19 ft. 6 in.

There are 200 staterooms arranged in double tiers, and twelve parlors, the latter fitted with baths. The galley and dining room with cafe are located aft under the main deck. Cafe and dining room combined will have a length of 90 ft. and extend over the entire width of the ship. The smoking room, 28 by 24 ft., is located on the hurricane deck. The most improved lighting and ventilating systems will be arranged all through the ships, and the passenger accommodation as a whole will, of course, exceed that of any of the side-wheel steamers now in service. Of this feature of the vessels more will be said later on.

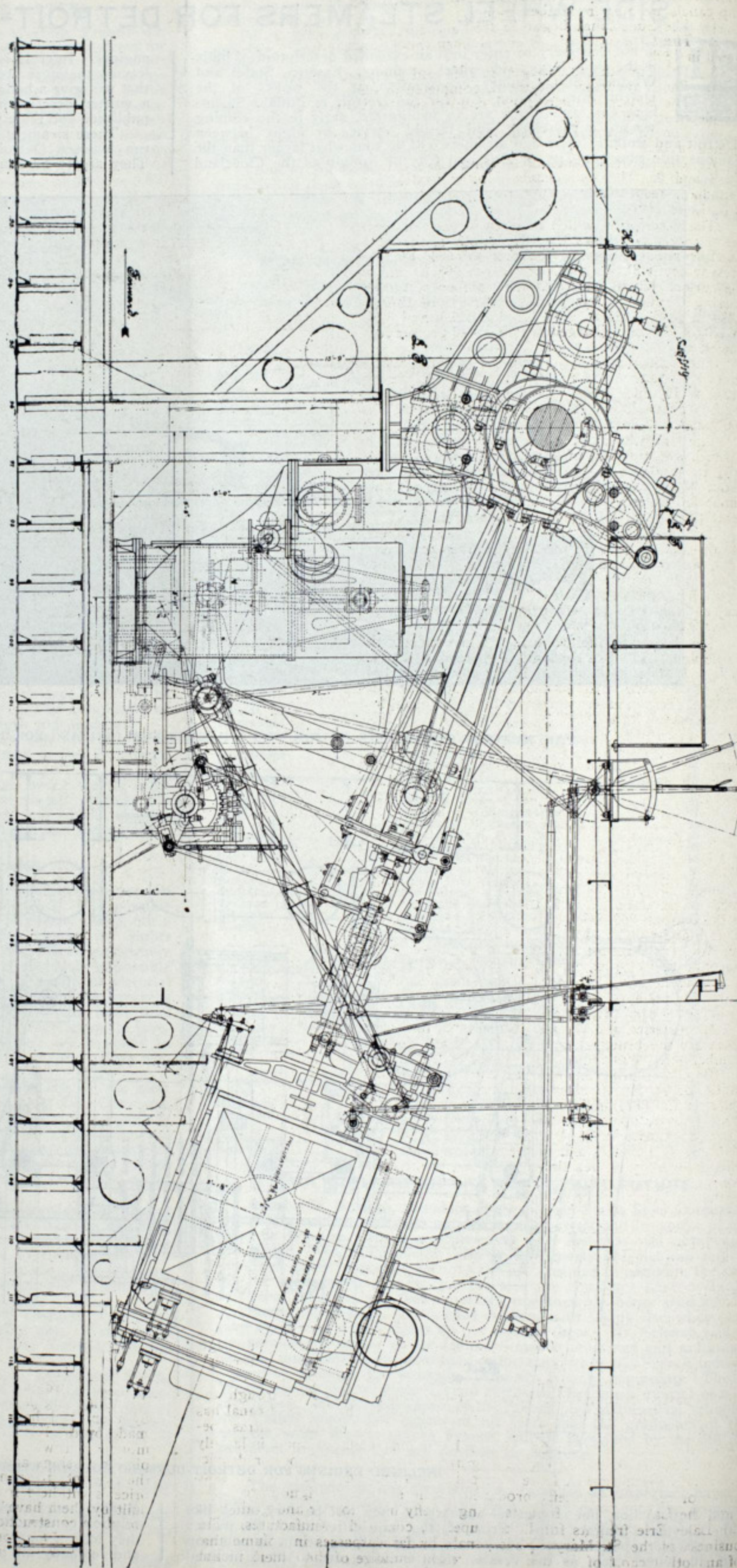
These steamers will be propelled by direct-acting inclined side-wheel compound engines. The cylinder diameters are 52 in. high pressure and 72 in. low pressure, with a stroke of 84 in. The high-pressure cylinder is fitted with a double-ported slide valve, working between double seats so as to be equal in balance to a piston valve. The low-pressure cylinder slide valves are treble-ported with ordinary balance plates on back. All valves are driven by the usual link motions and reversed by direct steam cylinder as well as a powerful worm and screw. The crank shaft is 18½ in. in diameter, of compressed fluid steel and supported in six journals. The pillow blocks are of cast steel and connected to cylinders by steel struts, which also form guides for the crossheads. The wheel shafts, also of compressed steel, are 20¼ in. in diameter. The paddle wheels are of the feathering type, 25 ft. diameter over buckets by 13 in. face, with ten steel buckets 4 ft. wide. The wheel centers are of semi-steel, and the arms of steel channels. The two air pumps, 43 in. diameter by 36 in. stroke, are worked from the low-pressure cylinder crossheads by means of levers and connections and discharge through pipes and valves into tanks arranged on the guards to trim ship when required. The two bilge pump plungers, 6 in. by 36 in., are attached to the air pump crossheads. The feed pump is of the independent outside-packed type.

Steam will be supplied from six single-ended boilers of 13 ft. 6 in. diameter and 13 ft. length, designed for a working pressure of 140 lbs. Each boiler has two 50-in. corrugated furnaces. The total heating surface is 13,254 sq. ft. and the grate surface with bars of 5 ft. 6 in. length is 275 sq. ft. The boilers are located entirely under the main deck and are worked under the Howden's system of hot draft. One stack is provided with elliptical section 7 by 10 ft. and 70 ft. high from the grate. The necessary air for combustion is supplied from two blowers having wheels of 84 in. diameter by 41 in. face.

#### WORLD'S GREAT CANALS.

"Great Canals of the World" is the title of a study prepared by the monthly bureau of statistics for publication in the forthcoming volume of the monthly summary of commerce and finance. The study is quite interesting in its reference to the great ship-canals of the world. The report says that ship-canals connecting great bodies of water and of sufficient dimensions to accommodate the great modern vessels plying upon such waters are of comparatively recent production and few in number. The one great example of works of this character which has been a sufficient length of time in existence and operation to supply satisfactory data as to cost of maintenance and operation and practical value to the commerce of the world is the Suez canal, and for this the available statistics begin with the year 1870, while its new and enlarged dimensions only date from the year 1896. For the Sault Ste. Marie canal, connecting Lake Superior with Lake Huron, statistics date from 1855, though for the canal in its present form they cover but about four years. Statistics of the Welland canal date from 1867, but for the canal in its present enlarged form cover only two years of operation. The other great ship-canals of the world are of much more recent construction and data regarding their operation therefore cover a comparatively brief term, and in some cases are scarcely at present

INCLINED ENGINES FOR DETROIT-BUFFALO CO. SIDE-WHEEL STEAMERS.





available in detail. The artificial waterways which may properly be termed ship-canal are nine in number, namely:

1. The Suez canal, begun in 1859 and completed in 1869.
2. The Cronstadt and St. Petersburg canal, begun in 1877 and completed in 1890.
3. The Corinth canal, begun in 1884 and completed in 1893.
4. The Manchester ship-canal, completed in 1894.
5. The Kaiser Wilhelm canal, connecting the Baltic and North Seas, completed in 1895.
6. The Elbe and Trave canal, connecting the North Sea and Baltic, opened in 1900.
7. The Welland canal, connecting Lake Erie with Lake Ontario.
- 8 and 9. The two canals, United States and Canadian, respectively, connecting Lake Superior with Lake Huron.

The description which is given of each of these great waterways shows that the length of the Suez canal is about 90 miles, the cost \$100,000,000, the present depth 31 ft., width at bottom 108 ft. and at the surface 420 ft., and that the number of vessels passing through it has grown from 486 in 1870 to 1,494 in 1875, 2,026 in 1880, 3,389 in 1890, and 3,441 in 1900. The tolls charged are about \$2 per net registered ton.

The Cronstadt and St. Petersburg canal, which gives a passage way for great vessels to St. Petersburg, is 16 miles long, including the deepening of the bay channel, 20½ ft. in depth, and the total cost estimated at \$10,000,000.

The Corinth canal, which connects the Gulf of Corinth with the Gulf of Aegina, is 4 miles in length, 26¼ ft. in depth, 72 ft. wide at the bottom, cost about \$5,000,000, and reduces the sailing distance about 175 miles. The average tolls charged are 18 cents per ton and 20 cents per passenger.

The Manchester ship-canal, which connects Manchester, Eng., with the Mersey river and Liverpool, was opened in 1894. Its length is 35½ miles, depth 26 ft., width at bottom 120 ft. and at the surface 175 ft., and cost \$75,000,000. The commerce on the canal shows a growth from 879,204 tons in 1895 to 1,492,320 tons in 1900.

The Kaiser Wilhelm canal, which connects the Baltic and North Sea through Germany, is 61 miles in length, 29½ ft. in depth, 72 ft. wide at the bottom, 190 ft. wide at the surface, and cost about \$40,000,000. The number of vessels passing through it has increased from 19,960 in 1897 to 29,095 in 1900, of which number 16,776 were sailing vessels. The tonnage in 1897 was 1,848,458, and in 1900 4,282,094 tons. An additional canal connecting the same bodies of water by way of the Elbe and Trave rivers was opened in 1900. Its length is 41 miles, depth about 10 ft., width 72 ft., and cost \$6,000,000.

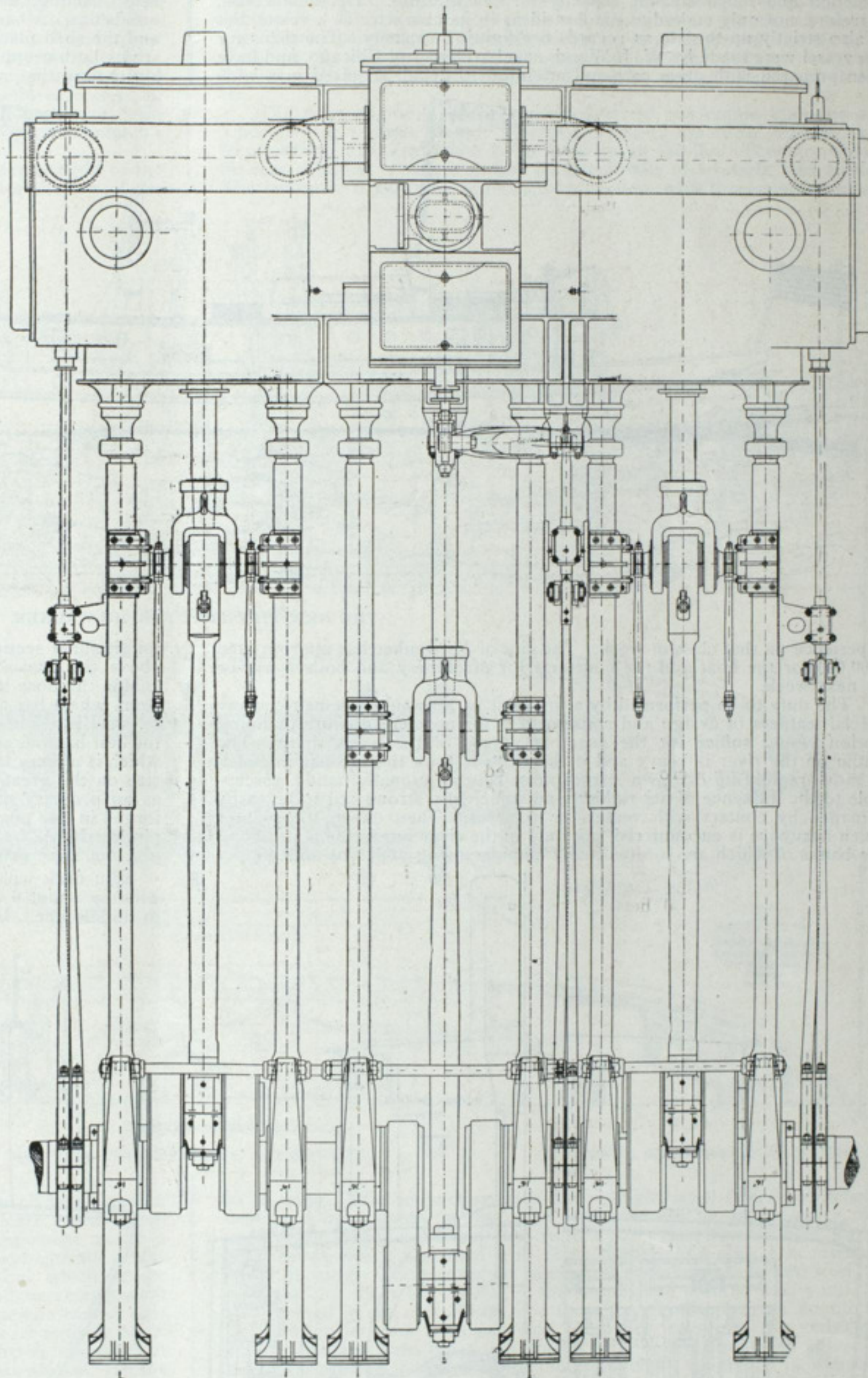
The great North Holland canal, which connects Amsterdam with the sea, cut in 1845 but deepened at a later date, has now a depth of 20 ft., a width of 125 ft. at the surface. The Caledonian canal, which connects the Atlantic and North Sea through the north of Scotland, is 17 ft. in depth, 50 ft. in width at the bottom, 250 miles long, cost \$7,000,000, and is at its highest point 94 ft. above sea level. The canal du Midi, cut through France from Toulouse on the Garonne to Cette on the Mediterranean, a distance of 150 miles, is 6½ ft. deep, 60 ft. wide, and 600 ft. above the sea level at its highest point, and has 114 locks; total cost, \$3,500,000.

In America the canals connecting the great lakes are the principal ship-canal and are three in number—the Welland canal, originally constructed in 1833 and enlarged in 1871 and 1900; the Sault Ste. Marie, or St. Mary's river canal, opened in 1855 and enlarged in 1897; and the Canadian canal in the St. Mary's river, opened in 1895. The American and Canadian canals at St. Mary's Falls are practically identical in location and dimensions, and are used interchangeably by vessels engaged in commerce, as convenience may dictate. The depth of the canals at the St. Mary's river is sufficient to accommodate vessels drawing 20 ft. of water. The American canal was originally constructed by the state of Michigan, but subsequently taken charge of by the United States and enlarged at a cost of \$2,150,000. The cost of the Welland canal was about \$30,000,000, largely due to the fact that twenty-five locks are required in surmounting the rise of 327 ft. in the distance of 27 miles. The number of vessels passing through the canals at St. Mary's river has greatly increased during the past few years, while the number passing through the Welland canal has materially decreased; the number passing through the St. Mary's canals being in 1873, 2,517, and in 1901, 20,041, of which 15,837 passed through the United States canal, and 4,204 through the Canadian. The number of vessels passing through the Welland canal has decreased from 6,425 in 1873 to 2,202 in 1899. The marked contrast between the business of the St. Mary's Falls and Welland canals is largely due to the fact that the freights originating in the Lake Superior district are chiefly discharged at Lake Erie ports, and those destined for the Lake Superior region are chiefly produced in the section contiguous to Lake Erie, the Lake Superior freights being chiefly iron, copper and grain, and the Lake Erie freights for Lake Superior, coal and manufactures. The business of the St. Mary's Falls canals by far surpasses in volume that of any other canal of the world, the freight tonnage of the American and

Canadian canals combined being in 1901, 24,626,976 registered tons, while the net tonnage of the Suez canal in 1900 was 9,378,152 tons, and that of the Kaiser Wilhelm canal 4,282,094 tons.

#### FACILITATING COALING AT SEA.

The naval board of construction has adopted plans for improving the coaling facilities of new warships. The board decided that the present system of coaling at sea was cumbersome and too slow. The new plans, which were submitted by Rear Admirals R. B. Bradford and F. T. Bowles, provide for doing away with a great deal of the exterior paraphernalia of vessels and substituting booms and derricks with which the coal will be



INCLINED ENGINES FOR DETROIT-BUFFALO CO. SIDE-WHEEL STEAMERS.

hoisted aboard. Wider hatchways for the coal holds are provided for also. These plans will be carried out in the construction of the battleships and armored cruisers for which contracts were recently awarded.

The board decided to recommend a modification of the present system of withholding payments to ship builders until the war vessels constructed by them had had a thorough practical test in commission. Inquiries made by the board showed that the contractors, to cover the interest on money borrowed to meet their expenses for the period between the completion of ships and the time of payment for the work, have been adding the amount of the interest to their bids. Twenty per cent. of the contract price is withheld from the contractors by the government until the ships built by them have been thoroughly tried, usually for five months. The board on construction believes that the withheld payments should be only 5 per cent. of the contract price. Through reducing the amount withheld, the contractors, they hold, will not include the interest payments in bids

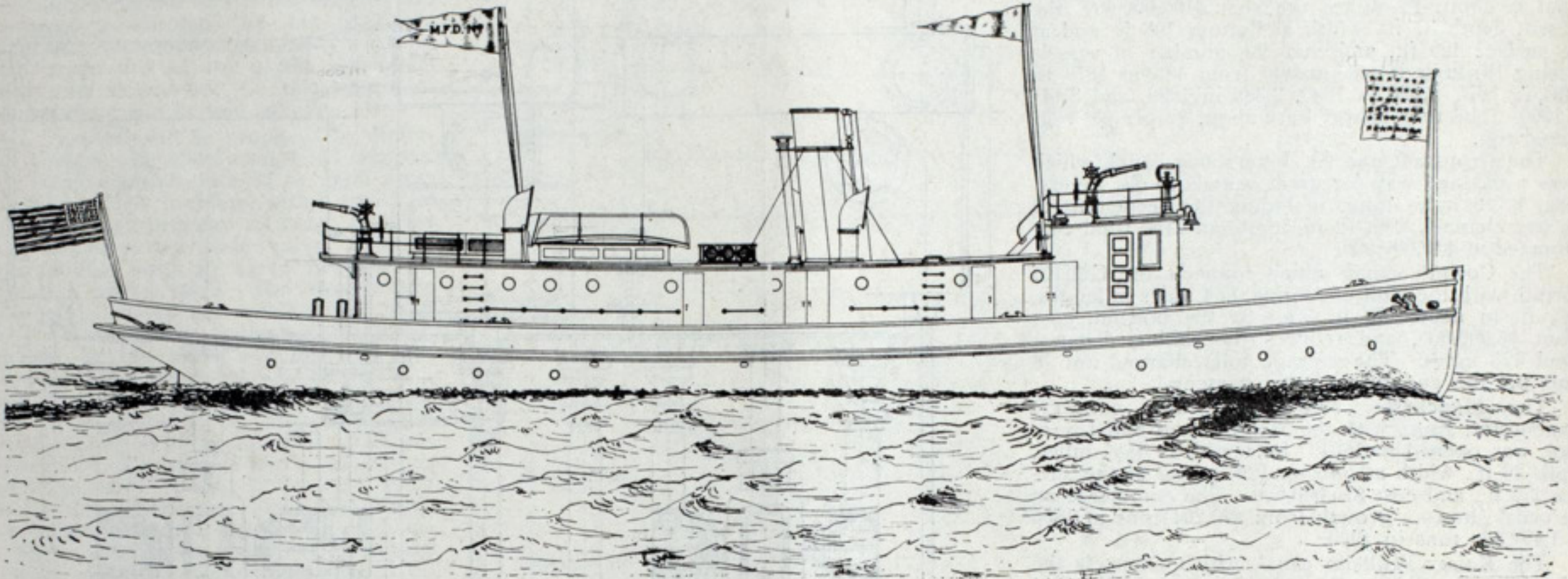


# NEW AND POWERFUL STEEL FIRE BOAT.



NEW fire boat is to be built for the city of Milwaukee and judging from an inspection of the plans and specifications the vessel will be one of the most efficient and powerful of her type afloat. In the drawings of the boat, which are published herewith and which are copyrighted, the chief features of design and construction can be observed. The Milwaukee fire department, which is one of the most efficient in this country, has had much experience in the use of this class of vessel, but of wooden construction and much smaller capacity for fire fighting. The new vessel, therefore, not only embodies modern ideas in its character as a vessel, but is also strictly up-to-date as regards fire-fighting capacity. The plans for the vessel were made by W. J. Wood, naval architect of Chicago, and have been prepared with great care and attention to detail, acquired in a wide

yards. The new boat will be built of open-hearth steel and is of the following dimensions: Length over all, 118 ft.; length between perpendiculars, 107 ft.; beam, molded, 24 ft.; breadth, extreme, 26 ft.; depth of hold, 12 ft. 9 in.; depth, molded, 13 ft. 6 in.; draught, aft, 10 ft. 6 in.; draught, forward, 10 ft. The hull is very thoroughly sub-divided, having four transverse water-tight bulkheads, a water-tight flat over trimming tank forward and one over after peak; and in addition to these the coal bunkers are carried along the sides the whole length of boiler space, the coal bunkers thus forming, with their water-tight doors, a cofferdam on each side amidships. A bar keel of 6 by 1½ in. steel is fitted, forming the stem also, and the shell plating is worked in outside and inside strakes with vertical seams butt-strapped and with double thickness from stem right aft, above and below the waterline for a sufficient width. As will be seen by the



THE NEW FIRE BOAT FOR MILWAUKEE.

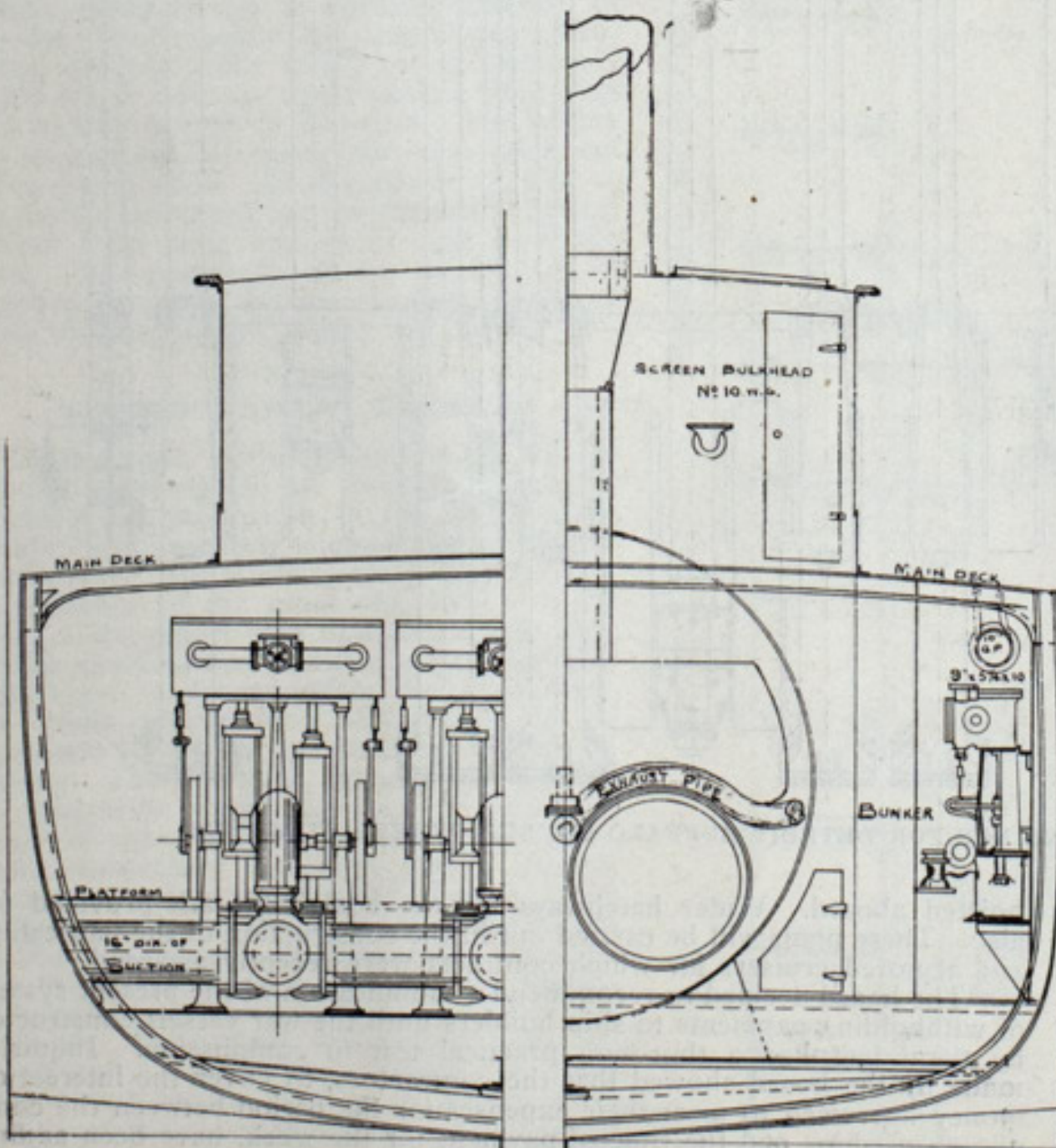
Drawing copyrighted by W. J. Wood.

experience on that class of work. The city of Milwaukee has appropriated \$100,000 for the boat and the contracts for machinery and boilers will be let next week.

The duty to be performed by a fire boat in Milwaukee demands many special features of design and construction, for no mere floating pumping station would suffice for the exacting nature of the work there. The traffic on the river is heavy and it therefore follows that a boat intended to move rapidly up or down stream must be exceptionally handy, susceptible to the influence of her rudder, and sufficiently strong not to be easily damaged by contact with vessels or wharves. Then during the winter much heavy ice is encountered, not only in the river but in the slips, along the banks of which are located many manufacturing concerns and lumber

longitudinal section, the keel at forward end is carried in an easy sweep above the load-water line, the forefoot being cut away considerably to enable the boat to work up onto the ice easily and crush it freely. The stem, which has a graceful slight inclination forward at top, is of 6 by 1½ in. steel bar, and the sternpost and rudderpost is to be of cast steel or of the best hammered scrap iron, 5½ in. molded by 3½ in. sided. The rudder, which is of very large sectional area, is wider than that of any vessel of her size on the great lakes. It is 8½ ft. wide fore-and-aft, which is as large as an ordinary-sized lake freighter's rudder. The rudder frame will be forged in one piece with stock 7 in. diameter at head and 4 in. at heel and pintle. It will be filled with pitch pine and rosin and plated with 13½ lbs. per foot steel plate.

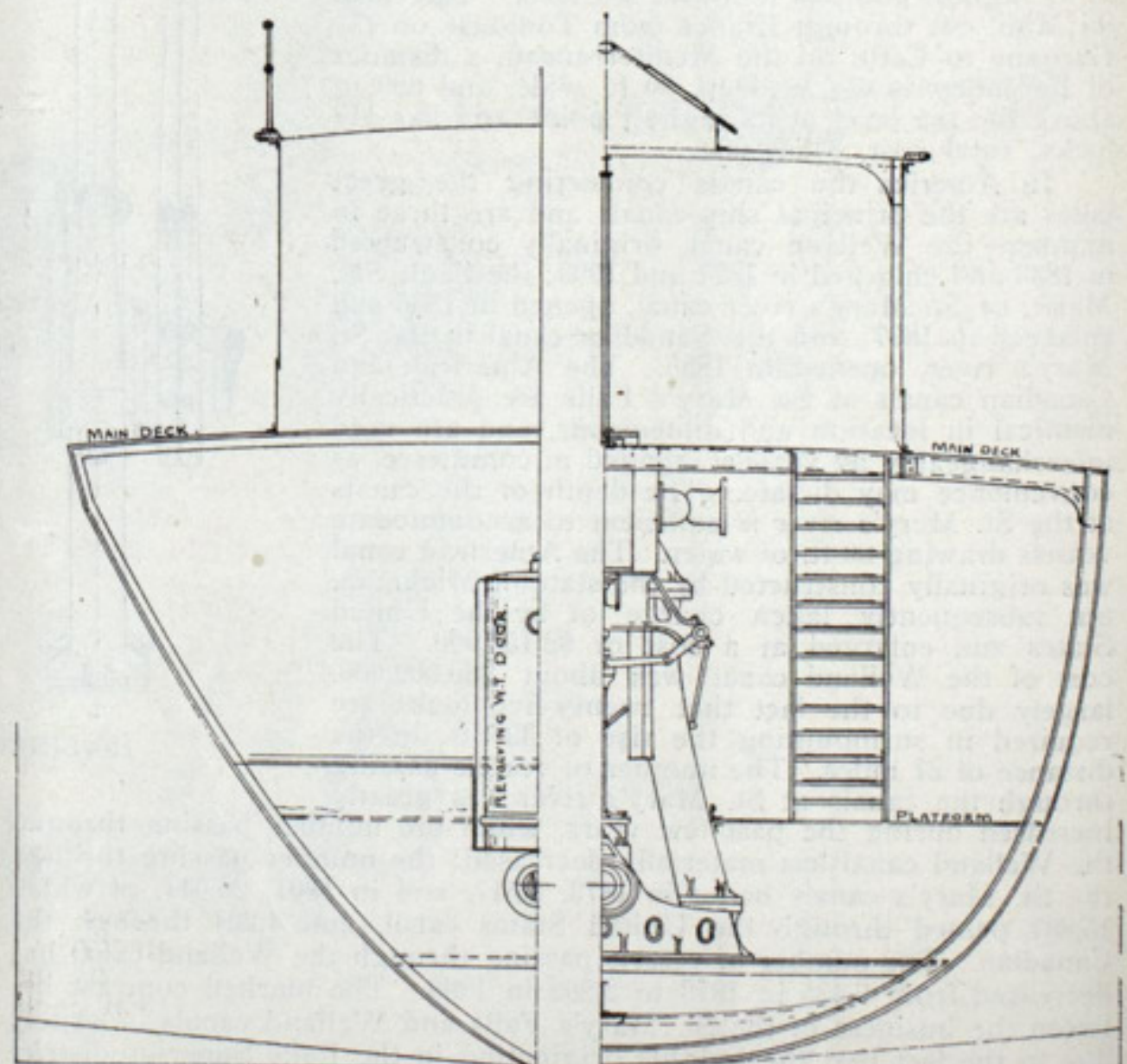
On deck will be a continuous steel house 72 ft. 6 in. long and 14 ft. wide by about 6 ft. 9 in. high at side, and with suitable chamber on top to middle line. In the forward end is the pilot house, finished in mahog-



HALF SECTION ABOUT FRAME NO 51.  
LOOKING FORWARD.

HALF SECTION THROUGH FRAME NO 36.  
LOOKING AFT.

Drawing copyrighted by W. J. Wood.  
THE NEW FIRE BOAT FOR MILWAUKEE.



HALF SECTION THROUGH FRAME NO 61.  
LOOKING FORWARD.

HALF SECTION THROUGH FRAME NO 54.  
LOOKING AFT.

Drawing copyrighted by W. J. Wood.  
THE NEW FIRE BOAT FOR MILWAUKEE.

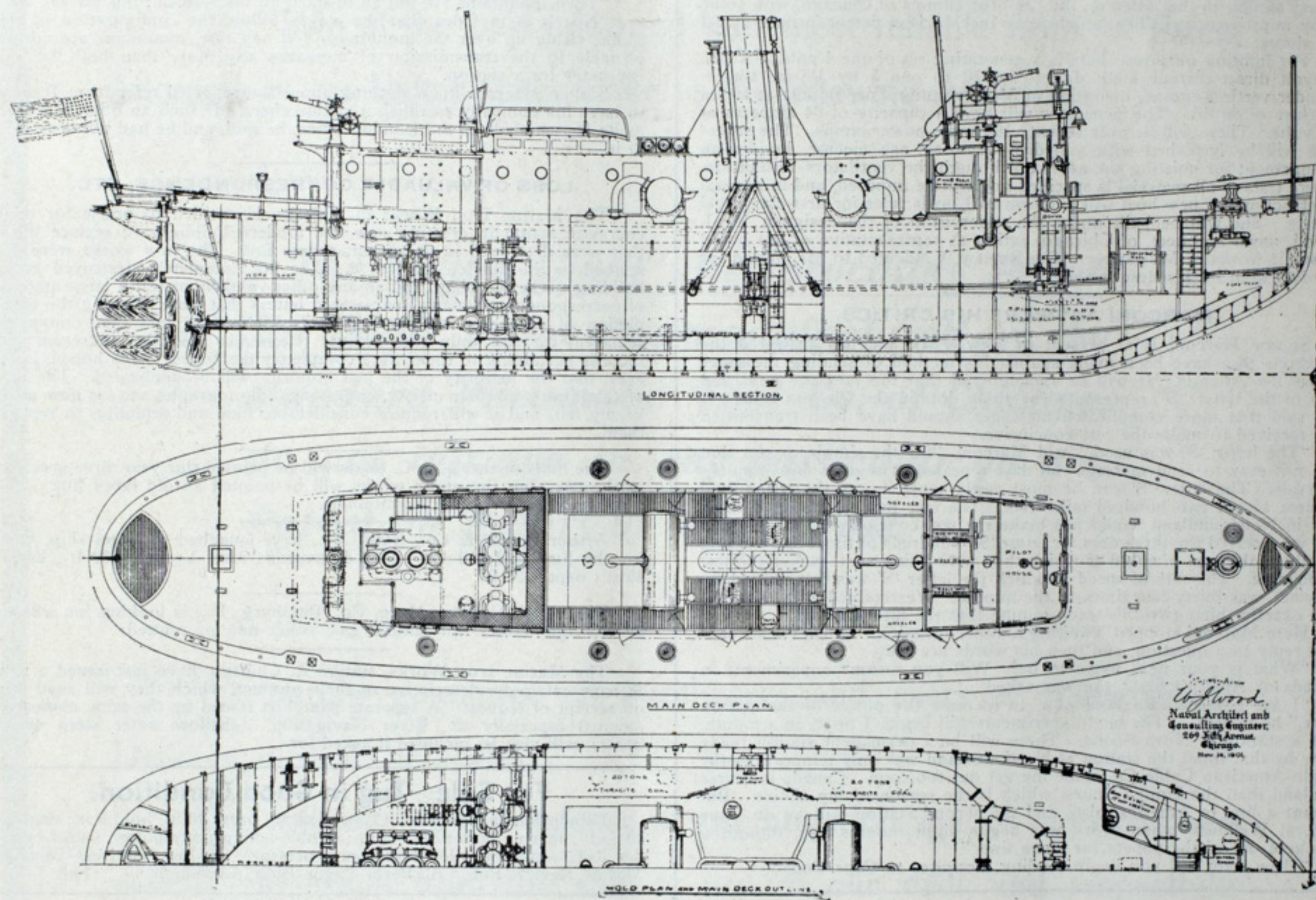


any, with patent interlocking rubber tile floor in assorted colors. Here are the steering wheels, connected by gears and a vertical shaft to a Williamson Bros. No. 151 steam and hand combined steerer, on the tank top below. Aft of the pilot house is the hose room, with two large reels to work in unison and coil the hose with no sagging from weight of brass or aluminum butts. The reels are fitted with crank handle bars and brakes, and work on anti-friction bearings. Boilers and engine occupy the balance of space in the deck house. The engine room floor is also covered with interlocking rubber tile in assorted colors and attractive design. On top of deck house there are two skylights of steel, one over the engine and the other over the pumps. On top of the latter is placed a yawl and forward of that is the life raft. On top of the fore end of pilot house is a 13-in. 20-ampere searchlight, arranged for inside pilot house control. The two rotary brass turrets are on top of deck house, the forward one having an 8-in. supply pipe and the after one a 6-in. supply pipe. The fore-castle is reached through a hatchway aft of the capstan, and here is located the bathroom and lavatories in fore-end of compartment, piped with hot and cold water and steam heated. The bathroom is finished in white steamboat enamel and furnished with hardwood gratings over deck. The fore-castle is fitted with racks, all numbered for the respective firemen's helmets, oilskins and "bunkers."

The boiler space and engine room take up the greater portion of the boat's length. Aft of the engine room is a workshop for the use of the

punched" to prevent slipping on it in winter. As will be seen by the out-board elevation, the boat is equipped with a jack staff at bow, flag staff at stern and two pole spars on top of house, which are all portable and will not be in place except on gala days and festive occasions. Telephone apparatus in pilot house and engine room may be readily connected with shore lines, to be used in receiving orders from chief engineer or marshals at a fire, any distance from boat, or even for communication with headquarters at the city hall. One feature pleasing to the eye in a crowded vessel with very limited wall space inside, will be the absence of things tending to mar the appearance of this wall space. It is provided in the specifications that all documents and papers, such as pilots' and engineers' licences, government rules and regulations, etc., are to be laid off on the wall and paneling built around them with glass centers to cover these documents. This is an improvement on the common practice of making neat regular paneling and then plastering up large and small frames of all sizes. A place is provided in the paneling for every electric lamp and bracket and also for the auxiliary oil lamps, as well as all gauges, clocks, etc.

The main engine is of the vertical inverted two-crank, high-pressure kind, driving a single screw. The two cylinders are 20 in. diameter and 20 in. stroke, to operate with boiler pressure of 140 lbs. They are carried on rear columns of cast iron and front columns of wrought iron turned. The bed plate is cast iron of box girder section, with three main journals,



THE NEW FIRE BOAT FOR MILWAUKEE.

Drawing copyrighted by W. J. Wood.

engineers, fitted up with benches and vise and shelves. There are four air ports and as many deck lights, in addition to a square scuttle fitted with edge rollers for taking hose through. This arrangement makes a light and well ventilated place to work in. Communication with the workshop is had through a water-tight door in the engine room, which will be of the Kirkaldy patent revolving kind. This is an ingenious arrangement of a cylinder within a cylinder, a door through which a person cannot pass without closing it behind him, and which is therefore never entirely open. This will be the first door of this kind installed in America, although it has been used with great satisfaction on first-class vessels abroad. In the way of deck appliances and equipment the boat has a steam capstan-windlass (naval style) with wild-cat on capstan for handling a 1-in. stud-link anchor chain; an 800-lb. anchor with 25 fathoms of chain and an anchor davit with all the necessary tackle so arranged that when not in use it is lashed under an oak grating. There is a complete equipment of bits, chocks, cleats, fair-lead-ers, scuppers and timber-heads, the latter being built exceptionally strong and designed to take a pull from any direction. These timber-heads may also be used as tow-posts in an emergency, although a fire boat is not a tug boat in any sense and engages in towing only in cases of absolute necessity. Ample runways and special deck scuppers are provided to rapidly free the decks of water.

A low steel bulwark of heavy scantling is carried all around the vessel, supporting a very wide and heavy oak rail. The wales or wood fenders are of stupendous proportions and look rather clumsy, but are designed to properly protect the bulwark and oak rail. These wales are carried between two angle bars, riveted to hull, and they are also through-bolted to the hull. The minimum quantity of wood is used in the boat's construction for very obvious reasons. The deck is of steel plating, "blind

10 in. long. The connecting rods are wrought iron, 4 ft. 6 in. between centers, 4 in. diameter at the upper neck and 4½ in. at the lower, with upper ends forged solid and eyes slotted out. Cast steel is used for the cross-heads, which are fitted with brass slippers and pins, 5 in. diameter and 3 in. long. The pistons are semi-steel and the rods forged steel, 4½ in. diameter. They are tapered in the pistons and secured with a nut, and also tapered in the cross-heads and there keyed. Stephenson double bar link motion is used, with cast iron eccentrics, wrought iron rods, steel valve stems and hard brass link blocks. These are fitted with adjustable gibs. Hammered iron is used for the crank shaft, which is 8 in. diameter, with couplings forged on, and also for the pins, the crank slabs being of cast steel. The thrust and line shafts are of iron 8 in. diameter. The propeller is of cast steel, 8 ft. diameter, 10 ft. pitch, true, four-bladed, extra heavy for service in ice, and designed with a view to giving the maximum efficiency when backing.

The auxiliaries include two Worthington Admiralty type duplex pumps, placed one on each side of the boat in pockets in stoke hold. A Worthington duplex sanitary pump is also included with both sea and fresh water tank connections. Forward of the engine and in the same compartment are three double-acting vertical, simple, duplex, crank and fly-wheel pumps. The steam cylinders are 17 in. diameter and 11 in. stroke and are of cast iron with piston valves. The pump ends are composition, with water cylinders 10 in. diameter and 11 in. stroke. Each pump will have a minimum capacity of 3,000 gallons per minute, with a pump pressure of 170 lbs. per square inch, the steam on boilers reckoned on being not less than 125 lbs. The pumps are designed with large free passages and valves, and large suction and air chambers. The running parts are of steel and the pump rods Tobin bronze. They



are very similar to those installed in the fireboat Illinois of Chicago in 1898 and built by the American Fire Engine Co. of Seneca Falls, N. Y. The shafts and journals have been increased in thickness and a few other minor changes, all of them that will be improvements. Connecting with the set of pumps are two 10-in. circuit water main pipes running along the sides just below the deck and coming together under the standpipes at forward and after ends of deck house, as shown on the longitudinal section. These standpipes are fitted with adjustable nozzles and when in operation are capable of sending solid streams of water 5½ in. diameter, and under, a great distance from the boat, with sufficient force to demolish an ordinary brick wall.

The boilers, two in number, are of Scotch marine type, 12 ft. diameter by 11 ft. long, placed front to front with 13½ ft. length of stoke hold between. Each has a steam drum crosswise on the boiler, 42 in. diameter and 9 ft. long. The boilers are equipped with interchangeable Morison suspension furnace flues, 47 in. diameter and 8 ft. 8 in. long, and have separate combustion chambers 29 in. wide at bottom and 26 in. at top, with a 6½-in. water space between chambers. Each boiler will have 228 Shelby seamless cold-drawn tubes, 2¾ in. o.d. by 8 ft. 2 in. by No. 11 w.g. thick. The boilers are of 60,000 lbs. marine steel to withstand a working pressure of 140 lbs. Each boiler has a pipe breeching connecting to a funnel which is common to both. The funnel is 36 in. diameter and has an outer casing of 48 in. diameter. The arrangement of forced draft is very similar to that fitted on the fire boat Illinois of Chicago, with some slight improvements. The boilers have the Morison patent furnace fronts and doors.

For lighting purposes there is a generating set of one 4-pole, 7-K.W., 110-volt direct-current kind, direct-coupled to one 5 by 4½-in. single-cylinder vertical engine, operating at 550 revolutions per minute at steam pressure of 80 lbs. The generator will have a capacity of 64 amperes at 110 volts. There will be over seventy 16-candle-power lamps. The stokehold will be furnished with a hydro-pneumatic ash ejector, besides an arrangement for hoisting the ashes up through the ventilators with tackle. Severe tests of all material is specified and will be imposed, and in general construction the new boat will conform to Lloyds rules for first-class steel vessels. She will be built under the supervision of the designer, W. J. Wood, naval architect, of Chicago, acting as representative of the board of public works of Milwaukee. The Review is indebted to Mr. Wood for the data used in this description.

#### MARCONI ANSWERS HIS CRITICS.

Signor Marconi is at present in New York and has answered the criticisms that have been made against his method of sending messages across the Atlantic. It will be remembered that the message consisted only of the letter "S" represented by three dots in the wireless code. It was said that more complicated messages should have been transmitted and received to make the test conclusive.

"The letter 'S' was used," said Marconi, "for the simple reason that it is not easy to send messages all day, repeated at regular and frequent intervals. The letter 'S' can be most easily sent; it was the letter used in most of our two hundred mile tests. The fact that we received three dots in Newfoundland would not make the test conclusive. But the fact that we received the three dots, or letter 'S,' hundreds of times and coming exactly at the rate of speed at which they were being sent, makes the test indubitable. The rate of speed at which the letter 'S' was transmitted, to be exact, was thirty-two times to the minute. We received at Newfoundland exactly thirty-two 'S's' each minute that the kite was up."

Here Marconi stopped, awaiting another question. Whatever he says is in reply to a question, and then his words are few.

"What is your next move to be? Will you resume experiments in Canada or America first?" he was asked.

"I am going to England now, to increase the power of the station there," he replied. "The next experiments will begin, I hope, in a month, with a station at Nova Scotia. There will be a permanent station ready there by that time; the station at Newfoundland was only temporary—the Anglo-American Cable Co. made me get out too soon. Canada is nearer England than the United States, which is the reason of my choice. But I want a line to America, also, and the second station will be on Cape Cod, at Wellfleet, where work was begun eight months ago, though it was kept out of the papers for some time."

"How soon will you begin sending messages to Cape Cod?"

## "Seaboard Steel Castings."

MANUFACTURERS OF  
"THE ADMIRAL" ANCHOR.

THE LATEST AND BEST  
STOCKLESS ANCHOR.

APPROVED BY LLOYD'S.

ANCHORS CAST AND TESTED ON  
ORDER, OR STOCK ORDERS  
PROMPTLY FILLED.

#### A GUARANTEE OF QUALITY.

OPEN-HEARTH STEEL CASTINGS  
OF THE HIGHEST GRADE.  
FACILITIES FOR CASTINGS UP TO  
80,000 POUNDS WEIGHT.

MACHINE WORK AND PATTERNS  
FURNISHED WHEN REQUIRED.

RAIL OR WATER DELIVERIES.

CAPACITY, 1500 TONS PER MONTH

**Seaboard Steel Casting Co.,**  
CHESTER, PA.

SEND FOR  
"ELECTROLYSIS  
OF CONDENSER  
TUBES"

**"BENEDICT-NICKEL"**  
Seamless Condenser Tubes  
resist Electrolysis.  
**BENEDICT & BURNHAM MFG. CO.**  
WATERBURY, CONN.  
New York, 253 Broadway. Boston, 172 High St.

"I hope within the year, though we have a busy year ahead of us." "Just how much more power is required to send a message two thousand miles than two hundred miles? Ten times as much?" "More than ten; nearer twenty times as much, though just how much more I can't say till I have a permanent station on this continent to work with."

"Is the cost also twenty times as great?"

"By no means."

"And it would be cheaper to build the two stations and send messages than to lay and operate a cable?"

"Undoubtedly," Marconi answered, shifting his weight to the other foot at the mention of cables, "though it costs from \$60,000 to \$70,000 to build one of our stations—more of an organized undertaking than most people suppose."

"Then the cable companies cannot be blamed for feeling some alarm?"

"I won't say a word about the cable companies," he replied. "They are looking after their business; I am going to look after mine. When I am sending messages over the sea they will doubtless be sending them under the sea, and it will be a question of the survival of the fittest."

"Do you expect to start other lines than the two from England to Canada and to the United States?"

"Yes, to India, perhaps. But not until the two transatlantic lines are put on a commercial basis."

"Then mountains are not an obstacle to the transmitting waves?"

"No; it is my idea that the waves follow the configuration of the globe, rising up over the mountains. At any rate, mountains are not an obstacle to the transmission of messages any more than high land is necessary for a station."

Signor Marconi knew nothing about the reported offer from Iceland to have his company establish a station there. If such an offer had been made, it was made to the London office, he said, and he had not been told of it.

#### LOSS OF VALUABLE CORRESPONDENCE, ETC.

The Marine Iron Works of Chicago is entitled to praise for their energetic action in erecting new and modern buildings to replace those that were destroyed in the recent severe fire. The new works were described in the Review of Jan. 9. The fire completely destroyed every building of the old plant, and among other valuable matter a large amount of correspondence—many unanswered letters that were awaiting the completion of drawings and special details. This is a loss that cannot be replaced, for not only the original letters but also the addresses and records pertaining to them were completely destroyed. It is hoped, however, that the majority of the lost inquiries will be duplicated. The loss of catalogues, circular matter, engravings, photographs, etc., is now most keenly felt, and it will require considerable time and attention to replace them.

The hulls of the D. & C. boats will be painted this year olive green as in the past, but the upper works will be painted an old ivory hue. The combination is certainly harmonious.

Arthur Sewall & Co., Bath, Me., have launched the steel ship Atlas for the Standard Oil Co. Her dimensions are: Length, 332 ft.; beam, 45 ft.; depth, 22 ft.

The A. W. Cadman Mfg. Co., Pittsburg, Pa., is looking for a 25 or 30 H.P. gas engine for natural gas, either new or refitted.

The Marine Iron Works, station A, Chicago, have just issued a new 48-page catalogue descriptive of their product, which they will send free on receipt of request. A separate pamphlet issued by the same company, devoted especially to "River Navigation" (shallow water stern wheel boats), will also be included if asked for.

#### For Sale—Tug in Good Condition.

Dimensions as follows: Over all 42 ft., beam 10 ft., hold 5 ft.; engines 10½x10; marine boiler 8½x44 in.; double-acting pony pump; steam cylinder 3x4; water cylinder 3x4; steam pressure 140 lbs. Address Box 22, Marine Review Pub. Co., Perry-Payne Bldg., Cleveland. Feb. 7.

#### For Sale—Tug Petrel.

Length 52 ft., beam 14½ ft., depth 6 ft. 2 in.

Engine, fore-and-aft compound, 12 and 22 in. x 12 in. stroke.

Boiler, Scotch type, 9 ft. x 84 in. diameter.

Now at Munising, Michigan, near Marquette.

Tug in A 1 condition in every way.

Feb. 7. H. M. LOUD'S SONS CO., Au Sable, Mich.

#### For Sale or Exchange.

Steamer Swan, light draught, 130 tons capacity. Also schooner Barkalow, 260 tons capacity. Or would exchange these both for steambarge with cash difference. Address W. J. Scully, 1209 Majestic Building, Detroit, Mich. tf

#### Tank For Sale.

Nearly new, first-class condition and tight. Diameter 7 ft. 6 in.; depth 6 ft. 6 in.; capacity 1,380 gallons; shell ¼ in.; heads ¼ in.; man-hole 11x15 in. Address W. B. Cowles & Co., Lake & Wason streets, Cleveland, O. Jan. 23.

#### For Sale.

Parties intending to purchase boats, write us stating fully the requirements of the vessel wanted, and we will forward list of boats for sale of the size needed, together with valuable information. Address Parker Chartering Co., Vessel Agents, Detroit, Mich. tf



# ANNOUNCEMENT.

TO THE TRADE:

Two of the best-informed and most reliable firms of Patent Attorneys in the United States make us the following statement:

*The "Little Giant" Reciprocating Piston Air Drills, now being manufactured by the Standard Pneumatic Tool Co. of Chicago, do not infringe in any particular on any Patent for Rotary or other Drills.*

We hereby guarantee all purchasers and users of "Little Giant" Drills against all liabilities.

We will assume the defense of any litigation against our customers which may result from the sale or use of our drill, and respectfully request the trade to pay no attention to **intimidating circulars** which are sent out for the sole purpose of **attempting to injure** our business.

Yours respectfully,

Standard Pneumatic Tool Co.

General Offices and Works,  
AURORA, ILL.

By E. N. HURLEY, President.



## NEW ENGINE AND BOAT YARD.

The Chas. P. Willard Co. of Chicago is among firms that have felt the effect of the great amount of ship building that has been going on of late; so much so that they recently reorganized, secured additional capital and erected a new factory at Winthrop Harbor, forty-four miles north of Chicago on the Chicago & Northwestern Ry. and the lake shore. Five acres of ground have been purchased and arrangements made for additional space when it is needed. Building ways will be erected on the shore and a dry dock is among the future improvements. The shops consist of buildings 50x150 ft. and 50x125 ft., each containing a traveling crane 20 ft. clear and 50 tons capacity, mounted in the center and traversing the full length of the buildings, which are of brick.

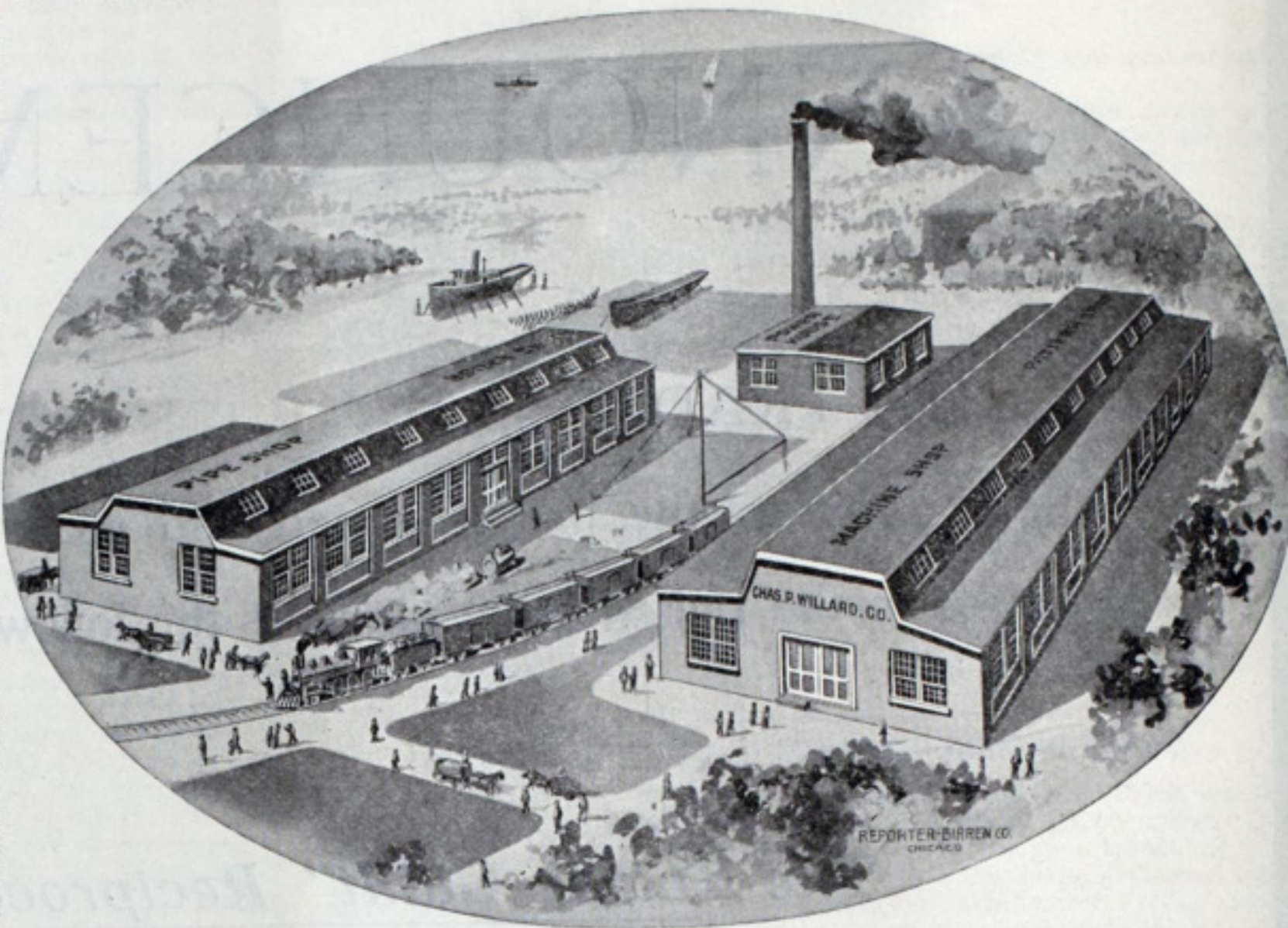
In addition to the usual items of marine machinery and fittings the company will give especial attention to a full line of simple, compound and triple-expansion engines for general marine use.

New officers of the company are: F. C. Walter, president and treasurer; G. Frank, vice-president; H. F. Repkow, secretary. The Chicago office of the company will be retained. A new catalogue is now being issued and will be mailed on application.

## GREAT BRITAIN AND 1901.

In a rather melancholy note the London Iron and Coal Trades Review remarks that "no one is likely to be very sorry to part with the year 1901. It has not, on the whole, been a good year. It may even be definitely described as a bad year—at any rate, for the United Kingdom. We have had to struggle against the still belligerent attitude of the Boers in the Transvaal, and our heavy expenditure on that account has in the past year been enormously swollen. This, however, would not have mattered so much had it not been that we have to face the prospect at the end of the year of the continuance of the war for an indefinite period. The vast outlay entailed by the war has had the effect of raising the income tax to not less than 1s. 2d. in the £, a figure which has not been reached for many years. The chancellor of the exchequer, casting about for ways and means, decided to levy a tax of 1s. per ton on all exported coals, which is a new departure, and one that is resented by those engaged in that business. The bad effect of the war has been made worse by the unfriendly attitude of some continental nations, and by the uncertainty as to how far the Boers might not ultimately succeed in persuading some of the great powers to intervene in

South Africa. In China affairs appear to be settling down, and in other countries there is every prospect of a continuance of peace, so far as present appearances can be trusted. In purely trade circles the great event of the year has been the formation of the United States Steel Corporation, with a capital of about £230,000,000, which we mention here because there were fears excited that it was directly intended to capture foreign trade,



and notably the foreign trade of the United Kingdom. The drop in American exports of iron and steel in the period that has since elapsed hardly justifies this conclusion. The British market, however, has been invaded by cheap German and Belgian steel to an extent that has never before been known."

For navigation charts apply to the Marine Review.

# BELLEVILLE GENERATORS

Grand Prix 1889  
Originated 1849

Hors Concours 1900  
Latest Improvements 1896

Number of Nautical Miles made each year by Steamships of the Messageries Maritimes Co., Provided with Belleville Generators—Since their Adoption in the Service.

Year.	Australien	Polynésien	Armand Béhic	Ville de la Ciotat	Ernest Simons	Chili	Cordillère	Laos	Indus	Tonkin	Annam	Atlantique
1890.....	67,728	2,460										
1891.....	68,247	68,331	204									
1892.....	68,247	68,403	69,822	23,259								
1893.....	68,379	68,343	68,286	68,247								
1894.....	68,439	68,367	68,574	68,439	37,701							
1895.....	68,673	68,766	68,739	68,808	40,887	28,713						
1896.....	69,534	92,718	69,696	69,549	62,205	63,153	40,716					
1897.....	68,250	69,606	92,736	69,555	62,235	76,110	63,357	43,146				
1898.....	70,938	69,534	69,552	69,597	62,526	63,240	63,240	62,553	63,954	22,707		
1899.....	69,534	69,615	67,431	90,405	60,246	62,778	62,868	52,344	54,855	44,007	22,884	
1900.....	69,534	67,494	69,744	69,564	61,719	62,382	62,502	51,471	53,373	62,016	63,066	52,140
Total.....	757,503	713,637	644,784	597,423	387,519	356,376	292,683	209,514	172,182	128,730	85,950	52,140

ATELIERS ET CHANTIERS DE L'ERMITAGE, À ST. DENIS (SEINE), FRANCE.

WORKS AND YARDS OF L'ERMITAGE AT ST. DENIS (SEINE), FRANCE.

TELEGRAPHIC ADDRESS: BELLEVILLE, SAINT-DENIS-SUR-SEINE.